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BRITISH MUSEUM NATURAL HISTORY

EDITED BY

DR. JEFFERY G. HARRISON

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PREFACE

THE PUBLICATION of the index number of Volume 80 has been delayed this year in order that the Committee could consider the possibility of producing once again an annual index of scientific names, for which there is an urgent need. Our sincere thanks are due to Mrs. B. P. Hall, who went to great trouble to produce such an index early in the New Year and we are pleased to say that it has been found possible to publish it in full.

This, together with the fact that we had produced a volume of 172 pages, seems likely to result in a small deficit in the Club's finances, which the Treasurer proposes to meet from the ''Bulletin Fund'', which has not had to be used for the past eight years.

The supply of papers remains most satisfactory and the number of subscribers continues to increase with new ones from the Argentine, Australia, Brazil, Canada and Dakar, which is most encouraging.

Once again Mr. C. N. Walter has very kindly prepared the List of Authors and I would also like to thank the following for their help with the present volume:— Miss E. Forster, Mrs. B. P. Hall, Dr. James Harrison, Mr. C. W. Mackworth-Praed, Captain C. R. S. Pitman, Mr. R. W. Sims and Mr. N. J. P. Wadley. At the time of going to press, we are pleased to announce that Mr. N. J. P. Wadley will be taking over control of the sales of old ''Bulletins'', which Mr. R. A. H. Coombes has had to give up on moving to Scotland. His splendid efforts have been of the greatest value to the Club's finances.

The numbers attending the B.O.C. meetings in 1960 were as follows:— Members, 177; Guests, 51; Guests of the Club, Mr. P. P. G. Bateson, Dr. and Mrs. R. K. Dell, Mr. P. Olney, Dr. W. E. Swinton and Captain G. Tuck, R.N.(Retd.); total, 234. This does not include the two joint meetings with the B.O.U. in March and October.

JEFFERY HARRISON.

Sevenoaks, *January*, 1961.

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- 5 JAN

PURCHASED

Edited by
DR. JEFFERY HARRISON

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The five hundred and seventy-seventh meeting of the Club was held at the Rembrandt Hotel, S.W.7. on Tuesday, 15th December, 1959, following a dinner at 6.30 p.m.

Chairman: CAPTAIN C. R. S. PITMAN

For the Christmas dinner, the Club entertained the Bird Artists. There was an exceptionally large gathering, forty-one members being present and forty guests. Among the guests were the artists Eric Ennion, Robert Gillmor, J. C. Harrison, D. M. Henry, A. M. Hughes, R. A. Richardson, Keith Shackleton, R. A. Vowles, D. I. M. Wallace, Donald Watson and Maurice Wilson. The Club was also delighted to welcome Dr. R. A. Falla and Dr. and Mrs. R. Cushman-Murphy as guests.

Dinner was followed by a small exhibition of contemporary paintings lent for the occasion by club members or brought by the artists. After this Captain Pitman handed the Chair over to Peter Scott for the "business" of the evening. The new Chairman introduced the speaker, Douglas Grant, of Oliver and Boyd, as one particularly qualified to speak on "Colour Reproduction". Mr. Grant gave a short history of art reproduction from the early engravings to the four colour technique, which he illustrated with most interesting slides showing the build-up of progressive proofs in the four colours of an embroidery picture of a lammergeier by Colonel Meinertzhagen, which was also on view.

The discussion which followed this instructive talk was based on some prepared questions the first of which was "Do artists consciously employ a different technique when painting for reproduction". Reid-Henry emphatically did not, but he was in the minority. Scott, Ennion and Watson all emphasised the need for introducing more sharpness and contrast, and Wilson thought it was unreasonable to ask more of a printer than the technique allows. Grant brought out the point that authors of bird books could help both artists and printers by not grouping birds of too many contrasting colours on a page,—and also in showing more unanimity with their artists on what colour the birds should appear!

This led up to the use of photos for illustration and as an aid to the artists. It was generally agreed that photos were more suitable to flat subjects such as butterflies, but there were varying views on their usefulness and the ethics of using them extensively. Scott suggested that, in books for identification, it was justifiable to caricature slightly to bring out diagnostic characters: this introduced the next question—"Can modern art be combined with accurate representation of nature?" Rather surprisingly the general opinion was that it can and that some bird pictures which subordinated accuracy to general composition could still be pleasing and stimulating to an ornithological eye. A firm distinction was drawn here between paintings designed for illustration and those that were not. Shackleton in particular felt that some exaggeration could enhance both the character of the bird and the composition of the picture. Gillmor spoke of the difficulties of breaking with tradition, but, on the whole, a modern tendency to make some break was welcomed.

The mention of tradition opened the final question "Is the market for bird pictures governed very much by the public's choice of familiar birds, there being few passerines painted compared to ducks, geese, game birds and waders?"

The popularity of large birds as subjects was put down to a variety of causes: from the artists' angle most present found there was more scope and more fun in a big canvas: Wallace suggested that the public in buying bird paintings wanted to bring the open spaces into their room rather than a replica of their gardens: Dr. Murphy thought that the best buyers in America were sportsmen who naturally preferred game birds (another speaker knew of a sportsman who used his paintings of game birds for sighting practice in the off-season). Scott told the sad story of a picture of goldcrests coming in over the sea which failed to find a buyer until he over-painted each goldcrest with a long-tailed duck. It then sold next day. He thought that the art galleries, with some notable exceptions, were slow to break with tradition and in this way dictated, to some extent, to both the artists and the public.

In conclusion Captain Pitman thanked Peter Scott and the other artists for a most entertaining discussion.

Much speculation and amusement was caused by A. M. Hughes' delightful cartoons of the birds at their dinner, on the menu kindly printed and presented to the Club by Messrs. Oliver and Boyd.

The Juvenile Plumage of *Apalis argentea* Moreau 1941 and a Note on the Habitat of the Species.

by MR. STAFFAN ULFSTRAND

Received, 7th September, 1959

The mountain areas on the eastern shore of Lake Tanganyika are known to contain a number of endemic bird subspecies (see Moreau 1943). So far, however, only one endemic species has been described, viz. the Kungwe Apalis, *Apalis argentea* Moreau 1941.

During Oxford University Tanganyika Expedition 1958, my colleague Mr. Hugh F. Lamprey and myself obtained two specimens of *A. argentea* in the Kungwe-Mahali mountains and had the opportunity to watch the species on a few occasions.

One of our specimens is in juvenile plumage which does not seem to be previously recorded in this species (Praed & Grant 1955: 419). Hence, it may be of interest to describe it briefly. The juvenile bird was collected on 24th August, 1958, near Ujamba, Kungwe-Mahali mountains, Western

District, Tanganyika Territory. It differs from adult birds chiefly through its very pronounced greenish tinge. Whilst adult birds are pure steel grey on the upperparts, the juvenile has these parts greyish green. This is particularly distinct on the wing-coverts. Also the top of the head is dark olive green. The underparts are light yellowish grey. The tail-feathers are similar in shape and colour to those of the adult. The iris of the adult bird collected by us was recorded as reddish brown, that of the juvenile as brown.

The adult specimen was collected on exactly the same spot as the juvenile on 23rd August, 1958. The habitat was gallery forest edge at an altitude of approx. 6,800 ft. There was a great deal of bamboo (*Arundinaria*) in the forest, and at clearings near the edges some tall dead trees were prominent. Both the birds were collected when seeking food in such trees, and all sight observations were made in the same habitat. Other birds characteristic of the same habitat were e.g. *Gymnobucco bonapartei cinereiceps* Sharpe, *Erannornis longicauda kivuensis* (Grote) and *Coracina caesia pura* (Sharpe).

Both the collected birds were members of a small family flock (probably the same), containing initially five or six birds. Being very mobile and shy, they were quite difficult to approach and collect, as noted also by Moreau's (1943: 393) collector. A continuous twittering call was recorded.

References:
Moreau, R. E. 1943. A contribution to the ornithology of the East side of Lake Tanganyika. Ibis 85: 377–412.
Praed, C. W. Mackworth & Grant, C. H. B. 1955. Birds of Eastern and North Eastern Africa. African Handb. of Birds, Ser. I, Vol. 2. London.

Geographic and Seasonal Variation in the Black-collared Lovebird, *Agapornis swinderniana*

by Dr. Kenneth C. Parkes

Received 10th August, 1959

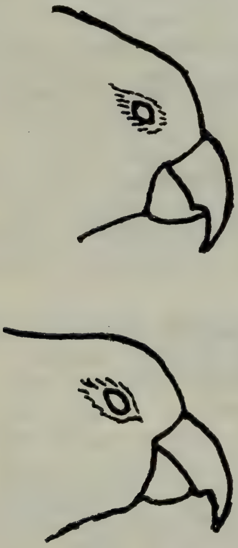
As repeatedly emphasized in Moreau's monograph of the lovebird genus *Agapornis* (*Ibis*, vol. 90, 1948, pp. 206–239), the type species *A. swinderniana* is a little-known bird and thus contrasts with the other members of one of the most popular genera in aviculture. At least two subspecies are usually recognised: the nominate *A.s.swinderniana* (Kuhl) of Liberia (which does not appear to have been collected in the past half century); and *A.s.zenkeri* Reichenow, assigned a range extending from Cameroons to western Uganda. In the Liberian population the black nuchal collar is followed by a second collar of yellow; in all others this second collar is red.

Birds from the Ituri Forest (Belgian Congo) were separated as *A.s.emini* by Neumann (*Bull. Brit. Orn. Club*, vol. 21, 1908, p. 42). This race was accepted by Sclater (*Syst. Av. Aethiop.*, pt. 1, 1924, p. 205) and Peters (*Check-list Bds. of World*, vol. 3, 1937, p. 255). Most recent authors, including Moreau (*op. cit.*), have followed Chapin (*Bull. Amer. Mus. Nat. Hist.*, vol. 75, 1939, p. 240) in synonymizing *emini* with *zenkeri*. It might be noted here that although Mackworth-Praed and Grant (*Bds. of E. and NE. Africa*, vol. 1, 1952, pp. 554–555) do not admit *emini*, they have omitted this name from their list of "Names in Sclater . . . which . . . have become synonyms in this work."

The type locality of *A.s.zenkeri* Reichenow is Jaunde (= Yaunde or Yaoundé), Cameroons. Carnegie Museum is fortunate enough to possess a fine series of specimens of *zenkeri* from Edea and Efulen, Cameroons, approximately 90 miles west and 95 miles south-west, respectively, of the type locality. When this series was compared with Chapin's excellent Belgian Congo series at the American Museum of Natural History, it became apparent that *emini* is not a synonym of *zenkeri*, but may be applied to the easternmost populations of the known range of the Black-collared Lovebird. As pointed out by Chapin (*op. cit.*), the species appears to have an interrupted range, as it has not been reported from the Mayombe or Kasai districts. Bannerman (*Bds. Trop. W. Africa*, vol. 2, 1931, p. 414) mentioned specimens from the vicinity of Bolobo, on the middle Congo River, collected by Schoudeten. This is rather of an outlying locality for the species, almost midway between the principal known ranges of *zenkeri* and *emini*, so the subspecific identity of these Bolobo birds should be investigated.

Differences between *zenkeri* and *emini*, which involve both colour and proportions, are not those stressed by the describer of *emini*, which may account for the reluctance of authors to admit the latter race. Neumann believed the upperside of *emini* to be darker than that of *zenkeri;* Ituri birds are, if anything, slightly paler above than most Cameroons birds, but the difference is insignificant. Variations in the shade of blue of the rump and upper tail-coverts are not correlated with geographic distribution. The only valid colour character in the original description of *emini* pertains to the red area behind the black nuchal collar, which averages decidedly more extensive in *zenkeri*. The tendency toward increased red in the latter race is also noticeable ventrally, with the orange-red wash on the breast being both deeper and more extensive in *zenkeri*.

The bill of *emini* is not "much stronger" as claimed by Neumann, but it does average somewhat more abruptly downcurved than that of *zenkeri* (see cut); this character is difficult to evaluate because of variations in preparation technique.



Bills of
Agapornis swinderniana.
Above,
A.s. emini, Gamangui,
Belgian Congo.
Below,
A.s. zenkeri, Bitye,
Cameroons.

Although there is no size difference between *zenkeri* and *emini*, the specimens examined indicate a pronounced difference in the length of the wing-tip, as expressed by the difference, in millimetres, between the longest primary and longest secondary wing quills. The possibility must be taken into account that this difference may be attributable to variations in preparation technique; however, the findings are consistent in spite of the fact that both series include the products of several collectors. Wing-tip measurements are as follows:

zenkeri ♂ : 28, 32, 33, 34.5, 35.5, 35.5, 35.5, 36, 37, 37.5, 38, 38.
emini ♂ : 23, 23, 23.5, 24, 24, 24, 24, 24, 25, 25.5, 25.5, 25.5, 26, 26, 26.5, 28.
zenkeri ♀ : 33.5, 34.5, 35.5.
emini ♀ : 22.5, 23, 23.5, 24, 24, 24, 25.5, 28.

Notes made on labels by collectors strongly suggest the interesting possibility that there may be a seasonal change in the soft-part colours of *Agapornis swinderniana*. The following notes are taken (in some instances, translated) from the labels of adults of all three subspecies and of both sexes combined; nothing on these labels suggests any geographic variation or sexual dimorphism in soft-part colours.

Iris Colour		**Foot Colour**
dark vinaceous (2)	*January*	yellow-green (2)
Martin's Yellow (1)	*February*	oil-green (1)
yellow (3)		grey (3)
yellow (3)	*May*	grey (3)
orange-yellow (1)	*June*	green-grey (1)
yellow (2)	*July*	greenish grey (3)
pale orange yellow (2)		greyish green (2)
light yellowish brown (2)		olivaceous (2)
grey brown (1)		
red orange yellow (1)	*August*	greenish grey (1)
orange (1)	*September*	
gull grey (4)	*October*	yellow (4)
gull grey (3)	*November*	yellow (3)

The listed foot colours are particularly suggestive of a seasonal alternation between grey and yellow, passing through greenish intermediate stages. The situation with respect to iris colour is less clear, and attention must be drawn to Chapin's statement (*op. cit.*) that the iris of a wounded bird changed from reddish orange to yellow soon after death. Assuming that the irides of all birds labelled "yellow" were, indeed, orange in life, there is still a suggestion of a seasonal change of iris colour.

In addition to the American Museum of Natural History's specimens, I was able to examine all of the specimens of *Agapornis swinderniana* belonging to the Chicago Natural History Museum. I am indebted to Drs. D. Amadon and A. L. Rand for these courtesies. Localities from which specimens were examined are listed below. These may be found in Chapin's gazetteer of African collecting localities (*Bull. Amer. Mus. Nat. Hist.*, vol. 75B, 1954, pp. 638–738).

A.s.swinderniana Liberia (various localities), 4.

A.s.zenkeri Cameroons: Efulen, 11; Edea, 4; Bitye, 2; Aloum, 1; Ebolowa, 1.

A.s.emini Belgian Congo: Gamangui, 5; Kita Kita, 3; Avakubi, 2; Baraka, 2; Beni, 2; Bengamisa, 1; "Ituri Forest", 1. Uganda: Bwamba District, 7.

A New Race of the Emerald Dove *Chalcophaps indica* (Linnaeus) from India

by AJIT KUMAR MUKHERJEE

Received 21st August, 1959

The emerald dove, *Chalcophaps indica* (Linn.) is a beautiful bronze-colored bird of humid evergreen forests of the Orient. The genus is represented by a single species.

Baker (1921) recognized two races of *Chalcophaps indica*, namely, *Chalcophaps indica indica* (Linn.) which is widely distributed throughout the Indian continent and Burma and *Chalcophaps indica robinsoni* Baker, confined to Ceylon. Peters (1937) listed a third race, *Chalcophaps indica maxima* (Hartert), from South Andamans. He remarked (*loc. cit.*, *note*): "Due to great range of variation in this species and lack of sufficiently long series from all parts of the wide areas it inhabits, I am not sure whether I have recognized too many or not enough races."

On examination of a good material of *Chalcophaps indica* from different parts of India, I am inclined to agree with Peters. I may point out, however, that although individual variation in this species is great, such as in the varying amount of bronze on the back, scapulars and wing coverts, and the vinous red on the breast and abdomen specially in female and young ones, yet in a series they can be resolved into geographical groups on some general characters.

Taking into consideration the size and general coloration of only adult males in fresh winter plumage, I recognize within India, besides the nominate race which occupies the major part of India, one more race which occupies the humid zone, with an annual rainfall of 50–100 inches, of south-western India. Since no name is available for this population, it is here described as

Chalcophaps indica salimalii, new subspecies

Type: B.N.H.S.* Regd. No. 12805; adult male; Jenmalai (*ca.* 500′), Central Travancore, Kerala; 2nd March 1947; Collector—Sálim Ali.

Material examined: Chalcophaps indica: 42 specimens: 22 ♂, 16 ♀, 4 unsexed. WESTERN HIMALAYAS: 2 ♂ Simla, 2 ♂ Mussoorie, 1 ♂, 1 ♀ Dehrahun; CENTRAL HIMALAYAS: 1 ♂ Nichlaul; EASTERN HIMALAYAS: 1 ♂, 1 ♀, 2 unsexed, Darjeeling; 2 ♂, 1 ♀, 1 unsexed, Sikkim; ASSAM: 1 ♂, 1 ♀, Tura, 2 ♀ Patherughat, 1 ♀ Balcamgiri, 1 ♀ Dibrugarh, 1 ♀ Naga Hills, 1 ♂, 1 ♀ Khasi Hills, 2 ♂, 1♀ N. Cachar; MADHYA PRADESH: 2 ♂ Kisli, Ghorela, 1 ♀ Rupjhar; EASTERN GHATS: 1 ♂ Orissa, 2 ♂ Nelliampathy Hills; WESTERN GHATS: 1 ♂ Surat Dangs, 1 ♀ Londa, 1 ♀ Joalbec; KERALA: 2 ♂, 1 unsexed Trivandrum, 1 ♂, 2 ♀ Mynall; 1 ♂ Anjengo; CEYLON: 1 ♂ Higara, 1 ♀ Udugama, South Province.

Description: Very similar to *C.i.robinsoni* but larger. The grey median line running from the head to scapulars present in *robinsoni*, is absent in Kerala birds. Emerald on the upper parts is less pronounced.

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* Stands for Bombay Natural History Society.

Compared with the nominate race it is larger and darker, has the abdomen lighter than the throat and breast and the metallic bronze on the upper parts less pronounced and green prominent.

Measurements (in millimetres):

		Wing	Tail	Bill from skull
Type of *C.i.salimalii*	1♂	152.5	93	23.5
Other specimens of *C.i.salimalii*	1♂	155	100 (Trivandrum Museum coll.)	
	a 2♂	152–155	93–101	—
	2♀	144–146	90	—
	b 1 (?)	155	82	—
C.i.robinsoni	1♂	136	90	—
	1♀	136	87	—
Other specimens of *C.i.robinsoni*	*c* 1♂	134	86.5	—
	5♀	134–142	80–93	—
C.i.indica	16♂	140–155 (147.8)	77–95 (86.1)	— —
(Himalayas and Assam, Uttar Pradesh, Bengal, Madhya Pradesh, Orissa, Eastern Ghats, Western Ghats)	6♀	135–151 (143.3)	72–91 (88.3)	—

a Measurements supplied by the British Museum.
b Measurements supplied by the American Museum of Natural History.
c *Ex.* Whistler, H. 1944. The avifaunal survey of Ceylon. Spol. Zeyl. 23, 253.

Range: Kerala.

Remarks: Ali (1953) had already recognized the fact that the Travancore birds were not the same as either Ceylonese or Peninsular Indian birds. This new dove is named in honour of Dr. Sálim Ali, the veteran ornithologist who has contributed a great deal of valuable information on the Indian avifauna.

I am grateful to the authorities of the Bombay Natural History Society for the loan of some material for my study; to Shri N. G. Pillai of the Trivandrum Museum, Kerala, also for lending a specimen for my study; to Mr. J. D. Macdonald of the British Museum and Dr. Charles Vaurie of the American Museum of Natural History for supplying me with measurements of emerald doves from their collection.

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Some Inter relationships in the Larks of the *Mirafra africana* Group

by Mr. C. M. N. White

Received 29th July, 1959

The southern and central African populations of this lark have been discussed several times in recent years, and the present notes deal mainly with some of the more northern groups.

Relationship between *M.africana* and *M.hypermetra.*

M.hypermetra in general may be said to replace *M.africana* in northern Kenya, the south east Sudan, Ethiopia and Italian Somalia. *M.hypermetra* and its races are larger birds than most *M.africana*, but Macdonald in describing *M.h.kidepoensis* found difficulty in deciding whether to assign his new form to *africana* or to *hypermetra.* In the end, despite its resemblance in colour to *africana tropicalis*, he assigned it to *hypermetra* on account of its size. In fact the two known popluations of *kidepoensis* differ inter se in this respect. Birds from Maroto and the Nakwai hills in north Uganda with wings 103, 106, 108 mm. are little larger than *tropicalis* (wing 94–101 mm.), and smaller than Didinga mountain birds (wings 109–113). I find no ground for regarding *kidepoensis* as anything other than a race of *africana*, differing from *tropicalis* in its larger size and more ruddy colour. The unique *kathangorensis* with similar size and more sandy grey back but rufous crown patch appears as one might expect on geographical grounds to be a perfect link with *hypermetra gallarum* which is still larger (wing 111–121 mm.), greyer above and with a less marked crown patch. The latter in turn differs from nominate *hypermetra* only in having a slightly marked crown patch and rufous wing coverts. The sequence of races *africana tropicalis*, *kidepoensis*, *kathangorensis*, *gallarum*, *hypermetra* thus replace each other, grading from one to the other and although the extremes are very different, they are linked by intermediate populations.

South of this sequence of races, *tropicalis* and *athi* occur in Uganda, Kenya and northern Tanganyika. Transition between the rich tawny *tropicalis* and the grey or sandy grey *athi* has not been well discussed before. Birds from Kisumu and Kavirondo are *tropicalis.* A series from the Loita plains, Loliondo and Embulbul in the British Museum (Nat. Hist.) demonstrates the transition to *athi*; of these the Embulbul bird is nearest to *tropicalis* but unusually dark; as Hanangs birds agree better with *tropicalis* I think *tropicalis* can be used for both Hanang and Embulbul populations. But those of Loliondo and the Loita plains are already much greyer on the back than *tropicalis* and in this respect agree with *athi* from which they differ in their well marked rufous caps. In Kenya at the Mau range, Nakuru, Naivasha and Nairobi this rufous cap has disappeared, leaving only a slight trace. I am indebted to Dr. A. L. Rand for details of Kenya material in the Chicago Museum of Natural History which shows a gradual change east and south to the greyest birds of the Athi plains and Kapiti plains which often show no tawny in either crown or wing coverts. *M.a.dohertyi* is available for the intermediate birds if it is desired to name them but unfortunately *dohertyi* is less well marked as an intermediate than the Loliondo and Loita birds. I propose here only to use the names *athi* and *tropicalis* and draw attention to the fact that these extremes are linked by various populations.

The greyest *athi* lacking rufous or tawny on crown and wing coverts can only be distinguished in size from *hypermetra.* This is well illustrated by two birds from lake Manyara and the Sanya plains in the British Museum which cannot be separated from *hypermetra* except by size (wings 100–101 mm.) against 114–124 in *hypermetra.*

M.hypermetra replaces *athi* from the Tana river to northern Guasso Nyiro, Isiolo, Marsabit, S. Ethiopia at Mega and Mogadishu in Somalia.

The curious feature is that *hypermetra* although it occurs at much lower altitudes than *athi* is such a strikingly larger bird, for the wings of *athi* measure 97–107 mm. in a long series. This in itself might be regarded as good reason for thinking that two species were involved. On the other hand we have above noted that *africana tropicalis* goes through a graded series of colour and size changes to link with *gallarum* which is very clearly conspecific with *hypermetra*. In addition despite the great size difference, *athi* and *hypermetra* are often indistinguishable in colour. If one postulates that populations spread northwards from *tropicalis* through the sequence of races described above to close the circle in the east by *hypermetra* meeting *athi* again, the succession of changes in colour and size assumes an orderly sequence, although the existence of smaller birds at higher altitudes and larger birds at lower altitudes remains unexplained in terms of Bergmann's rule. In the British Museum there is an apparent *hypermetra* from Loliondo collected at a much lower level than the *tropicalis-athi* intergrades, and presumably in dryer Rift valley country such as *hypermetra* might inhabit. This bird with wing 113 mm. is smaller than any other *hypermetra* males examined. More evidence and material from this area is needed to explain this isolated occurance of a bird resembling *hypermetra*. On balance it appears that *hypermetra* and the races associated with it in the past can be regarded as conspecific with *africana*. But more field work and collecting in areas of transition from *hypermetra* to *athi* is needed.

Transition in East African populations of *M.africana*.

Dr. Rand has drawn attention to the difference between the grey *athi* and red *harterti* and queried how transition occurs. Two birds in the British Museum from Useri, east of Kilimanjaro and from west of Moshi appear to be intergrades, and rather more like *harterti* than *athi*. The transition of *tropicalis* to *athi* has already been discussed.

Isolated northern races of *M.africana*.

Several isolated populations of *M.africana* occur in Darfur, Cameroons, Nigeria (Jos) and French Guinea. These populations are very similar to each other in various ways. They are all very small in size, wings 89–98 mm., they have small rather curved bills, and are very richly coloured. They appear to form a group of races which stand together and apart from other *africana* races.

Their characters may be summarised as follows:—

kurrae: cinnamon below including throat; above vinous rufous with heavy black streaking. Darfur.

stresemanni: very rich dark cinnamon rufous above with rather light black streaking; crown almost unstreaked; darker cinnamon below. N.Cameroons at Ngaundere.

bamendae: like *stresemanni* below, but very heavily marked with black above. Bamenda highlands of Cameroons.

batesi: nearest to *kurrae* but upperside a sandy red rather than vinous or pinky grey. Wrongly synonymised with *kurrae* it seems. Jos plateau, Nigeria.

henrici: almost as black as *bamendae* above but crown largely unstreaked; below like *batesi*, i.e. paler than *bamendae*. French Guinea.

M.a.malbranti of the French Congo and Kasai in the Belgian Congo links these small populations to the larger central and southern populations of Africa but unlike them is a light coloured bird with little streaking, and intergrades via *kabalii* into other populations further south. I include it with the more southern races rather than in the group of small isolated northern races.

The status of M.a.nigrescens

Re-examination of the series of *nyikae* and the bird from Njombe in southern Tanganyika shows that the latter agrees very closely with *nyikae*, and not with *tropicalis* as has been supposed. Mrs. Hall who has examined it with me agrees that the Nyika birds and the Njombe bird cannot be separated. The only other southern Tanganyika record is the unique type of *nigrescens* from Ukinga which agrees closely with the Nyika birds and shows insignificant differences. I believe that *nyikae* should be treated as a synonym of *nigrescens* until at any rate more material from southern Tanganyika is available. *M.a.nigrescens* as here understood seems to be a very isolated form of *africana* and probably approaching the level of specific distinctness. It exhibits a scalloped rather than streaked pattern above, elongated drop-shaped breast spots, a very long tarsus 36–39 mm. against 28–33 in adjacent races; a very long, straight hind claw; and a very short tail, only 54 per cent of the wing, against 60–66 per cent in other southern, central and eastern races.

Subspecies groups within M.africana

On the basis of their characters and the way in which populations intergrade the numerous forms of *M.africana* can be arranged in several groups.

i. Southern and central races: *africana*, *transvaalensis*, *grisescens*, *ghanziensis*, *pallida*, *occidentalis*, *chapini*, *gomesi*, *kabalii*, and *malbranti* seem to me to be the most worthy of recognition and all intergrade into each other.

ii. *nigrescens* of the Nyika-south Tanganyika highlands is very distinct.

iii. the north eastern group: *tropicalis*, *ruwenzoria*, *kidepoensis*, *kathangorensis*, *athi*, *harterti*, *hypermetra*, *gallarum* and *sharpei* form a group most of which pass into each other by transitional forms.

iv. the north western group: *kurrae*, *stresemanni*, *bamendae*, *batesi* and *henrici* are apparently isolated from each other but form a group of closely related forms.

I am indebted to Mrs. B. P. Hall for looking at these larks with me in the British Museum, to Dr. A. L. Rand for notes and information on the material in the Chicago Natural History Museum, and to Mr. C. W. Benson for the help his collector Jali Makawa has given me on various occasions in obtaining additional material.

The Type Locality of *Mirafra africanoides* Smith

by Mr. C. M. N. White

Received 11th June, 1959

Smith in describing this lark in 1836 gave the locality as the "Eastern province of the colony and Latakoo". In 1917 Roberts when separating the birds from Windhoek as *M.a.harei* remarked "Shelley has assigned the type locality to Hopetown". Macdonald in Contribution to the Ornithology of Western South Africa 1957 p. 95 treated this as a restriction by Roberts of the type locality to Hopetown which is not the case. I have not traced Shelley's "assigning" the type locality to Hopetown. Macdonald proposed to restrict the type locality to Colesburg and, observed that some of Smith's specimens in the British Museum were dark and heavily streaked. Unfortunately the specimens collected by Smith in the British Museum are not labelled with locality, and they are not a uniform series, since some are markedly paler than others, and could have emanated from further north west than Colesburg. No specimen was designated as the type.

Actually Roberts had already earlier (Ann. Trvl. Mus. xvi. 1935. p. 121) disregarded the locality Hopetown, and formally restricted the type locality to Litakun near Kuruman i.e. Latakoo as mentioned by Smith. In the absence of a designated type this was a perfectly correct restriction of the type locality, and cannot be arbitrarily set aside because Smith may have collected some specimens between Graaf Reinet and Colesburg. Under these circumstances the type locality should remain as Litakun.

A New Lark from Nigeria

by Mr. C. M. N. White

Received 18th August, 1959

Mirafra rufocinnamomea serlei subsp. nov.

Description: compared with the widely ranging West African *M.r. buckleyi*, this form is darker and richer in colour; the upperside is a deep reddish compared with the predominantly greyer *buckleyi*, and the underside is deep tawny ochre compared with the creamy buff of *buckleyi*.

Type: in the British Museum (Nat. Hist.). Collected at Enugu, Eastern region, Nigeria on 4th October, 1952 by Dr. W. Serle. B.M., reg. no. 1955. 59.133.

Distribution: the eastern region of Nigeria north to intergrade with *buckleyi* about the Benue river. Specimens from Lokodja agree well with *serlei* but others from Yola and Loko are somewhat intermediate.

Notes: buckleyi extends to Lagos and birds from the north of Nigeria are also referable to *buckleyi*. The new form in its red and deeply coloured plumage bears a slight resemblance to *tigrina* of the Ubangi-Uelle area but *tigrina* is lighter above and more vinous pink. I am grateful to Dr. Serle for the gift of specimens of this lark and to Mrs. Hall for examining these larks with me at the British Museum.

A new subspecies of *Anthoscopus caroli* (Sharpe 1871) from western Tanganyika Territory

by Mr. S. Ulfstrand

Received 31st May, 1959

Several subspecies of *Anthoscopus caroli* (Sharpe 1871) s. lat. occur within a comparatively restricted area in Northern Rhodesia, Nyasaland, S. Tanganyika Territory and S. Belgian Congo. Sometimes they are divided between two species, viz. *A. caroli* (Sharpe 1871) and *A. ansorgei* Hartert 1905. This is the arrangement adopted by Chapin (1954, p. 109).

But to me it appears a better way to follow Praed & Grant (1955, p. 655; see also Grant & Praed 1947–48, p. 74) and consider all the forms conspecific. *A. caroli* is then apparently the older name.

In the course of Oxford University Tanganyika Expedition 1958 a bird collection was obtained by Mr. Hugh F. Lamprey and myself from the Kungwe-Mahali peninsula on Lake Tanganyika in western Tanganyika Territory. This collection contains two interesting specimens of *A. caroli* which have been compared at British Museum (Natural History) with types and/or topotypical material as far as available of the following forms which seem to be relevant:—

1. *A. c. caroli* (Sharpe 1871): Damaraland.
2. *A. c. sylviella* Reichenow 1904: NE. Tanganyika Territory down to Iringa and Rungwe.
3. *A. c. ansorgei* Hartert 1905: S. Belgian Congo and N. Angola.
4. *A. c. robertsi* Haagner 1909: E. Northern Rhodesia, Nyasaland, and N. Portuguese East Africa.
5. *A. c. rhodesiae* Sclater 1932: Ufipa in SW. Tanganyika Territory, N. Northern Rhodesia, and S. Belgian Congo near Elisabethville.
6. *A. c. winterbottomi* White 1946: Mwinilunga area in NW. Northern Rhodesia.

Careful comparison shows that the Kungwe-Mahali specimens are clearly different from all the above subspecies. In spite of the meagre material and awaiting a review of the genus, it therefore seems convenient to separate the Kungwe-Mahali birds subspecifically.

Anthoscopus caroli pallescens, n. ssp.

Description: Upperside greenish grey with green wash clearer on rump; forehead pale yellowish grey; whole underside from chin to tail-coverts greyish with a slight yellowish wash and but the very slightest touch of buff on under tail-coverts.

The new subspecies thus differs from sspp. *caroli*, *sylviella*, and *robertsi* in the very nearly complete absence of buff or tawny on the underparts, and from *ansorgei*, *rhodesiae* and *winterbottomi* in the pale green colour on the upperparts.

Type: In the collection of the Zoological Museum, University of Lund, Sweden. Male, collected on 21st August, 1958, on Kabesi Ridge, east of Mt. Kungwe, Kungwe-Mahali peninsula, E. shore of Lake Tanganyika. Altitude approx. 5,500 ft. Colour of soft parts: bill slate grey, tarsus and feet blackish, iris brown. Measurements of type: wing 57 mm, tail 34 mm, bill from cranial hinge 8 mm.

Another male shot on 6th September, 1958, at Kibwesa, Kungwe-Mahali peninsula, at an altitude of approx. 2,800 ft. perfectly agrees in colour and has measurements: wing 53 mm, tail 34 mm, bill 8 mm. Both males were in song and in the company of a (presumed) mate when killed. The song was recorded as a high-pitched sibilant trill: ''see-see-see...'' gradually dying away.

The habitat of both the specimens and all other individuals recorded was *Brachystegia* woodland. The species was not uncommon in the highland type of ''miombo'' on Kabesi Ridge where the trees were generally in leaf. They usually occurred in mixed bird parties with *Hyliota flavigaster barbozae* Hartlaub, *Eremomela scotops citriniceps* (Reichenow), *Alseonax adustus fülleborni* (Reichenow) and *Salpornis spilonota salvadori* (Bocage).

In the lowland, however, where the second specimen was obtained, the species was scarce, for the pair, out of which the male was shot, was the only record within that zone.

The general distribution of the new subspecies remains to be worked out.

For hospitality and help I am most grateful to Dr. J. Macdonald and Mrs. B. P. Hall of the British Museum (Nat. Hist.). A generous grant from the Royal Physiographical Society of Lund is gratefully acknowledged.

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A New Race of Crowned Plover *Vanellus (Stephanibyx) coronatus* (Boddaert) from South-West Africa

by Mr. P. A. Clancey

Received 23rd July, 1959

Study of material of the Crowned Plover *Vanellus* (*Stephanibyx*) *coronatus* (Boddaert) recently collected in South-West Africa by members of the staffs of the Durban and East London Museums (May–June, 1959), shows that the populations of that territory are composed of distinctly lighter and greyer coloured birds than those of the Cape Province (topotypical of *V.*(*S.*)*c.coronatus*) and the eastern half of southern Africa. Friedmann, *Proc. New England Zool. Club*, 1928, vol. x, in his revision of the races of this wide-ranging species, recognised three forms: the widely dispersed nominate race, and two localized races (*V.*(*S.*)*c.demissus* (Friedmann), 1928: Suk-Soda, British Somaliland, and *V.*(*S.*)*c.suspicax* (Friedmann), 1928: Sadi Malka, Abyssinia) at the north-eastern end of the species' range. The pronounced characters shown by the South-West African Crowned Plovers more than fully justify the recognition of these distinct occidental populations as an additional race by name, which may be known as

Vanellus (*Stephanibyx*) *coronatus xerophilus*, subsp. nov.

Type: ♀, adult. Farm Elizabethhill, near Okahandja, Damaraland, central South-West Africa. Altitude 5100 ft. a.s.l. 13th May, 1959. Durban Museum Expedition. In the collection of the Durban Museum, South Africa.

Diagnosis: Differs abruptly from *V.*(*S.*)*c.coronatus* (Boddaert), 1783: Cape of Good Hope, *i.e.*, Cape Province, South Africa, of South Africa and the eastern half of the continent north to Kenya and, perhaps, southern Somalia, in the distinctly lighter and greyer upper-parts (slightly greyer than Vinaceous-Buff as against Buffy Brown (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. xl). Using the *Colour Atlas* of C. and J. Villalobos, 1947, the back of newly moulted *V.*(*S.*)*c.xerophilus* gives a reading of 00S–10–3° as against 0–7–2° in the nominate race. On the under-parts paler, this particularly noticeable on the breast, which is quite without the overlay of Buffy Brown present in *V.*(*S.*)*c.coronatus*. The blackish crown-spot is often reduced in size, thereby exhibiting more white peripherally than in *V.(S.)c.coronatus*. Similar in size.

Material examined: V.(S.)c.xerophilus, 12 (May, 1959.) *V.(S.)c. coronatus*, 29 (Cape Province, Natal, Swaziland, eastern Transvaal, Northern Rhodesia).

Measurements of the Type: Wing (flattened) 211, culmen (exposed) 28, tarsus 68, tail 94 mm.

Range: Known at present from central and northern South-West Africa, specimens being examined from the following localities: Windhoek, Okahandja, Otjiwarongo. Almost certainly extends northwards to at least south-western Angola (Mocamedes and Huila).

Remarks: The distinctive pallor of the new race of Crowned Plover was noticed in the field, and it was appreciated long before comparative study was possible that the South-West African populations represented a distinct undescribed race. *V.(S.)c.xerophilus* shows the normal trend in South-West African bird forms in being paler and greyer than those of the Cape Province and the eastern parts of the sub-continent. It is surprising that it was not discovered and named years ago by the various industrious German systematists of the early part of the present century.

The other race of the Crowned Plover inhabiting desertic regions of Africa, *V.(S.)c.demissus*, differs in having the upper-parts more reddish sandy in colour when compared with the nominotypical race. It also ranges rather smaller in size (wings 191–197 mm. (after Chapin, *Birds of the Belgian Congo*, part ii, 1939, p. 76)).

I am grateful to Miss M. Courtenay-Latimer, Director of the East London Museum, South Africa, for kindly allowing me to study the specimens of the new form obtained by members of the East London Museum party.

Geographical Variation in the White-backed Mousebird *Colius colius* (Linnaeus)

by MR. P. A. CLANCEY

Reichenow, *Journal für Ornithologie*, vol. xlvii, 1899, p.418, separated the populations of *Colius colius* (Linnaeus) from Damaraland from those of the Cape Province under the name *C.c.damarensis* Reichenow, 1899. The recognition of two races of this somewhat restricted species of mousebird has not been followed by most systematic workers, and the species is treated as monotypic by Sclater, *Systema Avium AEthiopicarum*, part i, 1924, p. 266; Peters *Check List of Birds of the World*, vol. v, 1945, p. 146; McLachlan and Liversidge, *Roberts Birds of South Africa*, 1957, p. 208, and Macdonald, *Contribution to the Ornithology of Western South Africa*, 1957, p. 87. Roberts, *Birds of South Africa*, 1940, p. 159, and Vincent, *Check List of the Birds of South Africa*, 1952, p.48, however, recognise *C.c.damàrensis* and give its range as "Damaraland."

Study of the adequate series of recently-taken specimens in the collection of the Durban Museum shows that the populations of Damaraland are not in any distinguishable from those of the north-western and northern Cape Province, Bechuanaland Protectorate and western Transvaal. They do, however, differ from examples from the southern and eastern Cape and southern Orange Free State in being paler grey over the head and on the under-parts, in having rather less extensive and paler vinaceous-fawn over the lower breast, while the creamy white abdomen and flanks lack the wash of rusty buff present in the southern and south-eastern populations. These unrecorded ventral colour differences seem to warrant the retention of two named races in our systematic treatment of the species.

The populations of the White-backed Mousebird can be arranged in two races, the characters and ranges of which are as hereunder detailed:

(a) *Colius colius colius* (Linnaeus), 1766: Cape of Good Hope, *i.e.*, Cape Province, South Africa.

Whole head, upper-parts, throat and upper breast about Neutral Gray (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. liii); feathers of chin and upper throat black at base; lower breast about Light Vinaceous-Fawn (pl. xl), and rest of under-parts (abdomen, flanks, crissum and under tail-coverts) creamy white with a pronounced overlay of Warm Buff (pl. xv).

Range: Western and south-western Cape Province, eastwards through the southern and interior Karoo districts to the eastern Cape, and in the western half of the Orange Free State. Intergrades with *C.c.damarensis* in the lower valley of the Vaal, along the course of the central Orange River (Prieska), in the southern Kenhardt district, and doubtless at other points to the westward.

(b) *Colius colius damarensis* Reichenow, 1899: Damaraland, South-West Africa.

Slightly paler Neutral Grey over the head and on the upper-parts than in *C.c.colius* (about Light Neutral Gray, *vide* Ridgway, *loc. cit.*, pl. liii). On the under-parts usually showing less blackish on throat; breast band not so broad and rather less vinous tinged (Vinaceous-Buff (pl. xl)), and with the abdomen, flanks, crissum and under tail-coverts creamy white without an overlay of Warm Buff.

Range: Central and southern South-West Africa (Damaraland and Great Namaqualand), western and southern Bechuanaland Protectorate, western Transvaal, and the northern and north-western (south to Kenhardt, where it meets *C.c.colius*) Cape Province.

On the Races of *Prinia pectoralis* (Smith)

by MR. P. A. CLANCEY

Received 10th September, 1959

Winterbottom, *Bull. B.O.C.*, vol. 77, 9, 1957, pp. 155–156, in his useful revision of the races of the Rufous-eared Prinia recognises two subspecies, placing *Prinia pectoralis hewitti* (Roberts), 1932: Aerodrome, Grahamstown, eastern Cape Province, as a synonym of nominate *P.pectoralis* (Smith), 1829: Bitterfontein, southern Little Namaqualand. The second recognised race, *Prinia pectoralis malopensis* (Sharpe), 1903: Molopo River, Bechuanaland, occurs to the north of the Orange River and is paler coloured throughout, being much whiter below. The material in the Durban Museum collection supports Winterbottom's findings (*cf.* Macdonald, *Contribution to the Ornithology of South Africa*, 1957, pp. 138–139), but an adjustment to the name of the southern Bechuanaland populations appears to be necessary.

Winterbottom places as a synonym of nominate *P.pectoralis* the name *Drymoica ocularius* Smith, 1843: northern districts of the Cape Province to the Tropic of Capricorn (*vide Illustrations of the Zoology of South Africa*, Aves, 1843, pl. 76 (and text)). Study of the coloured illustration on pl. 76 and of the description convinces me that *D.ocularius* is the correct name for the populations named *Spiloptera malopensis* by Sharpe. The illustration shows a bird with the under-parts whitish, a narrow black cincture on the lower throat, and the flanks unstreaked (precisely the differences which separate *P.p.*"*malopensis*" from the greyer breasted and strongly streaked *P.p.pectoralis*), while the description is equally diagnostic. Smith makes no mention whatever of a grey wash on the breast nor of streaks on the flanks of his *D.ocularius*, stating, "chin and throat white, breast . . . posteriorly dirty white tinted with broccoli-brown, which is also the colour of the belly, thighs and vent." Taking the illustration and the diagnostic points in the original description together, there can be no doubt that *D.ocularius* is the correct name for the form generally recognised under the name *P.p.malopensis* by workers. It would seem desirable to fix a definite type-locality for *P.p.ocularia*. Smith almost certainly obtained this form during his journey northwards from Kuruman, and this locality may be cited as the restricted type-locality of *P.p.ocularia*. Kuruman is also mentioned in connection with this name by Roberts, *Annals of the Transvaal Museum*, vol. 15, 1, 1932, p. 31. The names of the two races of the Rufous-eared Prinia will now stand as follows:

1. *Prinia pectoralis pectoralis* (Smith), 1829 (synonym *Priniops ocularia hewitti* Roberts, 1932).
2. *Prinia pectoralis ocularia* (Smith), 1843 (synonym *Spiloptera malopensis* Sharpe, 1903).

A single male in the Durban Museum collected in Damaraland in May, 1959, with the under-parts pure white, the black bar on the lower throat absent, and the ear-coverts and upper-parts much paler than in *P.p. ocularia*, suggests the existence of a markedly different third race (at present innominate) in the north-west of the species' range.

Leg Colour of the Moorhen

by Mr. Ian D. Woodward

Received 6th September, 1959

On the 6th September, 1959, and subsequently on 7th and 8th September, an adult female Moorhen *Gallinula chloropus* Linnaeus, was seen by the writer frequenting King's Langley gravel-pit, Hertfordshire, with bright canary-yellow legs; the bird, otherwise, was in normal breeding plumage and possessed five chicks. It seems that this yellow leg tendency in Moorhens appears mainly on otherwise normal immature or adult birds (*cf.* Sage, 1958), but birds with both yellow legs and bills relate more to albino adults (*cf. ibid. Brit. Birds*, vols. xliii, p. 383; xliiv, p. 140; xlv, p. 39; and xlviii, p. 189). The yellow iminent on the bird under discussion, covered the legs and toes, and, of interest, the absence of the usual red and yellow garter above the tarsal joint was particularly noted.

Reference:
Sage, B. L. (1958): "Variant leg and bill colour of the Moorhen". *Brit. Birds*, li: 158–159.

5 JAN 1960

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DINNERS AND MEETINGS FOR 1960

19th January, 16th February, March, with the B.O.U.*, 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

*As usual, the March meeting is joint with the B.O.U. and the date will be decided by them.

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- 4 FEB 1960
PRESENTED

BRITISH MUSEUM
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Edited by
DR. JEFFERY HARRISON

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BULLETIN
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PRESENTED

The five hundred and seventy-eighth meeting of the Club was held at the Rembrandt Hotel, S.W.7., on Tuesday, 19th January, 1960, following a dinner at 6.30 p.m.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 20; Guests, 8; Guest of the Club, Captain Gerald Tuck, D.S.O., R.N. (Retd.); Total, 29.

The Royal Naval Bird Watching Society

Captain Tuck, Chairman of the Society, gave a talk on its aims and work. Although sailors have always taken an interest in birds, particularly the early navigators, it was not until 1946 that the Society was brought into being, by a small band of naval officers under their first President, Admiral Sir William Tennant. In 1956 the Society was opened to all ranks of the Merchant Navy, which has proved a great success.

Members are now provided with standard Sea Report Sheets, white for sea birds, pink for land birds. All reports are plotted on charts and are the basis of the "Sea Passage Bird Lists" which are gradually being built up, describing the route and the birds likely to be seen at different times of the year and today a mass of information is being received. A central library for these reports has been established in the Bird Room of the Natural History Museum, South Kensington.

Members have now started ringing birds, using the "National Institute of Oceanography" rings, or in certain cases, the "F.I.D.S." rings. The Society is also co-operating with the New South Wales Albatross Study Group. Another important object is to build up a photographic record of birds at sea to assist identification and Captain Tuck concluded by showing a selection of really excellent slides from their collection, which gave some idea of the thrills of bird watching at sea.

In the discussion which followed, Admiral Sir Charles Lambe, the First Sea Lord and President of the Society, spoke of its value to the Navy in developing powers of observation and preventing boredom at sea. Dr. W. R. P. Bourne, who is analysing the Sea Report Sheets, stressed their value and the need for the utmost descriptive accuracy. Mrs. B. P.

Hall hoped that some skinning instruction could be provided for members, so that those birds which die on board could be preserved for study and Dr. J. G. Harrison pointed out that such birds could be brought home in the refrigerators or injected with formo-saline and skinned later. He also mentioned assisted passages for birds and Captain Tuck said that the Society had already obtained a great deal of information about this.

The Chairman then thanked Captain Tuck for giving us a most interesting evening. The Society is a small but most unusual one and is worthy of every support.

Notes on some African Warblers

PART ONE

by MR. C. M. N. WHITE

Received 21st September, 1959

The present series of notes was compiled during the preparation of a Check List of certain genera of African warblers.

(1) *Bradypterus baboecala* Vieillot

The variation in this species is rather slight, and insufficient note has been taken of the fact that much of it is clinal. A cline runs from nominate *baboecala* northwards to Tanganyika; birds from eastern Northern Rhodesia show the small size and darker, browner upperside of *moreaui* (type locality Amani), and the latter in northern Tanganyika is scarcely different from *centralis* in colour. Both topotypical *moreaui* and *centralis* are dark olive brown above, *centralis* being slightly less tawny on the flanks, slightly smaller in bill size, and better streaked on the foreneck. It seems likely that *moreaui* will eventually be found to link via coastal Kenya and the Juba river with Ethiopian birds which are again similar to *moreaui* but rather lighter above and still weaker in bill. On the western side of central Africa the slightly atypical *moreaui* likewise grade into the darker *msiri*, which in its most western localities (Ngamiland and Angola) becomes more blackish. I regard *benguellensis* as a synonym of *msiri*.

A final group of races is characterised by its dark rich red upperside; it comprises *elgonensis* (darkest), *sudanensis* and *chadensis*. The latter two are lighter red than *elgonensis*, and seem only to differ in size, the unique *chadensis* having a wing of 58 mm., and *sudanensis* wings of 50–54. Here again it is likely that there will be found a continuous range linking these red backed populations; at present it would be convenient to unite *sudanensis* with *chadensis*.

(2) *Bradypterus graueri* Neumann.

The differences between *graueri* and *grandis* seem no more than subspecific, and although the unique type of *grandis* has only 10 feathers, the tail of *grandis* is somewhat worn, and loss of tail feathers in *Bradypterus* is common. I regard *grandis* and *graueri* as conspecific.

(3) *Bradypterus barratti* Sharpe.

There is every reason for considering *barratti* and *mariae* as conspecific. Three species groups can be recognised viz.

(a) the southern *barratti* group, comprising *godfreyi*, *major*, *barratti* and *priesti*.

(b) the eastern *mariae* group comprising *mariae*, *granti* and *usabarae*.

(c) the western *camerunensis* group comprising *camerunensis*, *boultoni*, *manengubae*.

The type series of *camerunensis* is rather lighter and warmer than *youngi* Serle which is more olive brown and notably olive washed on the breast. This led Serle to think that two species might exist on Cameroon mountain. But recently collected *boultoni* from Angola show that lighter and darker birds exist there also. The lighter colour of *camerunensis* may also be accentuated by foxing of old skins. I believe that *youngi* is a synonym of *camerunensis*. *Boultoni* is very near to *camerunensis*, only differing in its heavier streaking on the foreneck.

(4) *Bradypterus cinnamomeus* (Ruppell).

The various populations of this species can also be most easily understood by dividing them into three groups.

(a) a northern group of strongly cinnamon and tawny birds. In addition to the very richly coloured *bangwaensis*, I find that *mildbreadi* of Ruwenzori is sufficiently brighter red than *cinnamomeus* to warrant recognition. The brighter and lighter upperside is especially marked on the head top. I cannot distinguish *macdonaldi* (west Ethiopia) from other *cinnamomeus*, but *cavei* of the Imatong mountains is darker and more brownish red above.

(b) an intermediate group of populations comprising *rufoflavidus*.

(c) a southern group in which cinnamon and rufous is replaced by olive brown. Here I would only recognise *nyassae*. The supposed darker colour of *ufipae* is not constant or well marked and although Sumbawanga birds show slightly scaly crown patterns due to darker feather edging, this is not found in the populations of Northern Rhodesia. The latter on the other hand sometimes show a trace of streaking on the foreneck. None of these southern populations seems sufficiently well differentiated to merit recognition of more races than *nyassae*.

(5) The genus *Schoenicola*.

After comparing the Indian *platyura* and African *brevirostris* I have no doubt that they should be made conspecific, *platyura* being the earlier name for the species.

(6) *Acrocephalus rufescens* Sharpe and Bouvier.

The darker eastern and central African populations bear three names—*niloticus*, *foxi*, and *ansorgei*. Of these the supposedly larger *foxi* of the Kigezi and Kivu highlands is not in fact very well differentiated with wings 80–85 against 72–81 in *niloticus*. It may average slightly whiter below than *niloticus*, but is at best a rather slight highland race. The range of *niloticus* has now been extended west in Northern Rhodesia to the Lukanga swamp and western Balovale. The unique type of *ansorgei* (wing 82 mm.) is very doubtfully separable and the gap between Balovale and Duque de Bragança in north Angola is not very great. Further collecting seems likely to show that *ansorgei* is the same as *niloticus*.

(7) *Acrocephalus gracilirostris* Hartlaub.

The clinal nature of variation in this species has been insufficiently demonstrated. In south and east Africa *gracilirostris* and *leptorhyncha* differ only in the small size of the latter, both being rather light birds with whitish undersides, and tawny flanks and rumps. It is interesting to note the existance of an isolated population of *leptorhyncha* in the Aussa country of the Hawash valley which may be brighter and more tawny on rump and flanks than other *leptorhyncha*. Unfortunately the skins available are rather worn and not very well prepared, so I refrain from naming them.

The large *parvus* of the Kenya highlands is a darker and richer olive brown than *leptorhyncha* above, with much less contrasting tawny on the rump, and the flanks more grey brown, less tawny. Similar coloured but smaller birds occur in north Tanganyika at Mondul, Mbulu, Kome island in lake Victoria, and the Lugufu river on lake Tanganyika. These small birds are much darker than *leptorhyncha* to which they have been referred, and I cannot distinguish them in colour from *parvus*. They have wings in males of 67–70 against 70–77 in the Kenya highlands. In southern Ethiopia (lakes Zwai and Margherita) another similar coloured population occurs with wings 67–72 mm. Probably *palustris* Reichenow (1917, Ndjiri swamp, near Kilimanjaro) could be used for the small birds of north Tanganyika if they are separated, but in view of the intermediate birds of south Ethiopia, I think it better to keep all these dark populations as *parvus*. *Tsanae* of lake Tana is very similar, and only slightly differentiated in its more extensively and darker greyish underside, and average darker and duskier upperside. Wing 70–75 mm.

I cannot separate the pale greyish olive *jacksoni* of lake Victoria from *nuerensis* of the White Nile on colour. Uganda birds are larger, wings 67–71 mm. against 63–67 mm. in Sudan birds, but the variation is comparable to that in *parvus*. I do not recognise *nuerensis*.

(8) *The genus Sphenoeacus*.

The monotypic *Sphenoeacus* is characterised especially by its specialised tail with stiffened shaft, and narrow webs. *Achaetops pycnopygius* is structurally very like *Sphenoeacus afer* in its streaky plumage, bill structure, wing form and feet, but has a normal tail, of dark colour with ill defined light tip, and rufous flanks. *Melocichla mentalis* is again structurally very like *Achaetops*, but lacks the streaky plumage. Its tail is exactly like that of *Achaetops*, and it has similar rufous flanks. The habits of these three monotypic genera of warblers are in general very similar. I believe that relationships would be better expressed by placing all three species concerned in the genus *Sphenoeacus*.

(9) *Sphenoeacus mentalis* (Fraser)

The difficulty in defining any races in this warbler has been noted before (e.g. by Chapin and Benson). The series in the British Museum is now very large, and shows that in West Africa and the Belgian Congo, there is very great individual variation ranging from redder to browner and more dusky or greyish backed birds, with flanks extensively and deeply rufous or with little and pale tawny there. This led Schouteden to place all the Belgian Congo birds under nominate *mentalis*.

I find that birds from the north eastern Belgian Congo, south Sudan, west Ethiopia, Uganda and west Tanganyika are fairly constantly of the dark type, and those from Angola, the Katanga and Northern Rhodesia mostly of the rather warm reddish brown type. Birds from central Kenya are more greyish brown, and those of the Chyulu hills are again very dark. I can see no difference to separate so called *amauroura* and *granviki*.

Although these more constant variations in the east and south might be thought enough to justify the recognition of *amauroura* and *grandis* they fall within the much more unstable range of variation of West African and Belgian Congo birds.

I consider that in addition to *mentalis*, the only definable races are *orientalis* (very pale and sandy brown above) and *luangwae* (very pale and greyish above). I have examined *orientalis* from Pangani river, Usambara, Pugu hills, Kilosa, Njombe, Mocuba and Melsetter. A bird from Mahenge in Tanganyika is however dark. South Nyasaland birds show a trend towards *orientalis*, but I consider fall better under *mentalis*.

(10) *Hippolais pallida laeneni* Niethammer.

Prior to the recent description of *laeneni*, the birds of this species breeding from Air and Zinder to Maidugari and lake Chad were assigned to *reiseri*, breeding in the oases of south Algeria. Vaurie (Bds. Pal. Fauna. 1959) states that topotypical *reiseri* is paler and more sandy above than the Egyptian *pallida*, and males have wings of 64–69 mm. I find six males from Maidugari and Chad have wings of 60–66 mm., and I find some difficulty in separating them in colour from Egyptian breeding birds (wing of males 63–67 mm.). They may average a little paler but the difference is very slight. Birds breeding at Khartoum were erroneously identified by Captain Grant as *elaeica*. They are in fact inseparable from Chad birds. 8 females from the same range have wings 58–62 mm. It seems inappropriate to assign these birds to *reiseri* if the latter is really more sandy than *pallida*, and as large as Vaurie states. Unfortunately the British Museum possesses no topotypical *reiseri*. On the material which I have seen *laeneni* seems very close to *pallida;* all that can be said for it is that it averages a little smaller and paler.

(11) *Eminia cerviniventris* (Sharpe).

Chapin (bds. Belg. Congo. iii) has drawn attention to the possibility that this bird is in fact very closely related to *Bathmocercus rufus*. He had not seen *cerviniventris*. Examination of the series in the British Museum shows that *cerviniventris* is in fact the upper Guinea representative of *B. rufus*. *Cerviniventris* differs in wholly black crown, olive brown (not rufous) upperside, and cinnamon (not grey) flanks and belly. No females of *cerviniventris* were available to show whether the same sexual dimorphism is present here as in *B.rufus*, but a juvenile agrees well with the juvenile of *B.rufus*.

A note on *Acrocephalus boeticatus* Vieillot

by Mr. C. M. N. White

Received 21st September, 1959

Examination of this reed warbler has revealed several points of interest. Birds from the Cape Province to Transvaal and Natal, and those usually separated as *suahelicus* Crote from Mafia, Pemba, Zanzibar and the coast of Tanganyika are inseparable on colour, and about the same in size. Nominate *boeticatus* has wings 58–62 mm. and *suahelicus* 56–60 mm. I conclude that *suahelicus* cannot be maintained as a distinct form. Birds from South West Africa are however separable. For these I propose:—

Acrocephalus boeticatus hallae—subsp. nov.

Description: paler and greyer, less warm tawny olive above than nominate *boeticatus;* whiter below with reduced tawny on the sides. Size the same as in *boeticatus.*

Type: in the British Museum (Nat. Hist.) Male, Brandberg, South West Africa. Collected on 11th April, 1950 by the B. M. South West Africa Expedition. Registered number B.M.1950.50.564.

Range: South West Africa.

All the other material from Southern Rhodesia, Nyasaland, Northern Rhodesia and Angola north to the Sudan and lake Chad differs in smaller size (wing 52–57 mm.), and darker and richer red rump, and represents *cinnamomeus* Reichenow; the only exception is the unique type of *nyong* Bannerman, which differs in its very rich red upperside and flanks and still appears a valid form. I am grateful to Mrs. B. P. Hall for examining these warblers with me.

Notes on some African Larks

by Mr. C. M. N. White

Received 21st September, 1959

These notes are part of a series compiled during preparation of a Check List of African larks.

(1) *Mirafra pulpa Friedmann.*

The unique type of this lark from the Sagan river, south Ethiopia was compared to *M. javanica passerina.* It was said to be redder above than *M. j. marginata*, the bill larger and matching that of *passerina.* The wing was given as 84 mm., the tail as 60.5 mm. Recent authors have placed it as a synonym of *M. j. marginata* without seeing the type. I have seen about 50 *marginata* none of which is reddish above; moreover they have wings in males of 74–81 mm., and tails of 48–52 mm. The measurements of *pulpa* agree much better with those of *M. williamsi* in which the wing is 84–86 mm., tail 53–58 mm. So too do the reddish colour and bill, larger than *marginata*, resembling that of *passerina.* Friedmann compared *williamsi* with *pulpa*, and found it deeper rufescent and less heavily streaked above, which he thought might be due to age. Since it is not possible to obtain the type of *pulpa* on loan, one can only go on the available data of it, and I fail to see how *pulpa* can be regarded as identical with *marginata.* It appears to be identical with *williamsi* and an earlier name for it.

(2) *Mirafra albicauda* Reichenow.

Examination of all the populations shows several micro-subspecies. Kenya birds are rather brownish above, Rukwa birds paler and more grey, birds from Uganda and the southern Sudan blacker, and those of lake Chad rather pale, faintly streaked and large billed. Unless several slight races are named it is preferable to synonymise *rukwensis*, and recognise no subspecies.

(3) *Mirafra africana* Smith.

Clancey has proposed to recognise *rostrata* (Hartlaub) (1863, Natal) as redder above than nominate *africana*, but paler than *transvaalensis.* The facts as given by him are correct for the Natal birds, but they appear to be an intermediate between *africana* and *transvaalensis*, and better not separated by name.

(4) *Mirafra sabota* Smith.

The small billed nominate *sabota* ranges from Gemsbok pan, Bechuanaland east to Swaziland with comparatively little variation. Two slightly differentiated races have been proposed. Of these the eastern *suffusca* Clancey (1958 Swaziland) is constantly dark, and has an absolutely longer tail than in nominate *sabota*, wing tail index 60% against 56.2%. Gemsbok pan birds are constantly pale; over a wide intervening area of south Bechuanaland and Southern Rhodesia birds are more variable, some as dark as *suffusca*, others almost as pale as *sabotoides* of Gemsbok Pan. Although the differences do not seem to me well enough marked to justify subdividing nominate *sabota* into three forms, the slight average differences do exist. Transition from these small *sabota* to *waibeli* takes place immediately north of Gemsbok pan at Ghanzi where specimens match birds from Ngamiland and Etoscha pan in their slightly larger bills and colder colour. A cline runs from Gemsbok pan to Ngamiland and Etoscha pan, the Okaukweyo birds being the whitest. I now think it inadvisable to subdivide this series of populations, and would not now recognise either *elfriedae* or *vesey-fitzgeraldi* as distinct forms. Of the various populations *waibeli* is slightly the palest and whitest, *elfriedae* a little greyer, and *vesey-fitzgeraldi* a little browner.

(5) *Mirafra poecilosterna* Reichenow.

Examination of this species shows that several slightly marked populations exist, but that no formal recognition of subspecies is needed. Birds from north eastern Tanganyika are the brownest above and most richly coloured below; those of the Tana river and west to Marsabit are palest, more sandy above and lighter rufous below. Birds from south Ethiopia (Mega) and from the south east Sudan and Lasamis and Lokitaung are darker and greyer above, and darker, more brownish on the breast. A further series of Ethiopian birds from Amar Koschi and lake Stefanie is again pale, as pale as Tana river birds, but averaging colder and greyer above. I have seen a very pale example from north Somalia.

(6) *Mirafra burra* Bangs.

This species has been located recently in *Ammomanes* and as a separate genus, *Pseudammomanes*. It is in fact very close to *Mirafra albescens*, being merely a large version of the latter with a stouter and larger bill. I should place it next to *albescens* in the genus *Mirafra*.

(7) *Ammomanes deserti kollmanspergeri* Niethammer.

This form recently described from Ennedi is a valid form, near to *erythrochroa* but darker and redder. Birds from Darfur belong to *kollmanspergeri*, those of Kordofan to *erythrochroa*.

Postscript (*to The Limits of the genus Mirafra*)

Since this paper was completed I have received Verheyen's "What is Certhilauda?" (Ostrich, 1959, 51–52). In the absence of any attempt to consider the adaptive significance of anatomical and skeletal characters I cannot accept them as being of greater cogency in deciding systematic problems than any of the other criteria generally used. Moreover until

Dr. Verheyen has examined the anatomy of all the species of *Mirafra* it is hardly possible to tell that the criteria set up as anatomical features of *Mirafra* hold for all the species. Osteometric indices upon which Verheyen places considerable weight can hardly be considered in isolation without regard to their adaptive significance. One point of interest which does emerge from Verheyen's study of anatomical characters is that *albofasciata* exhibits some unique features in its short notarium. Since *albofasciata* is in any case a very aberrant *Mirafra*, this additional character may justify retaining the monotypic genus *Chersomanes* for *albofasciata*.

The Ethiopian and allied forms of *Callandrella cinerea* (Gmelin)

by Mr. C. M. N. White

Received 21st September, 1959

C. c. erlangeri (Neumann) of Ethiopia is very well differentiated from the more southern forms by the large black patches at the sides of the breast; the upperside is also relatively well invaded with black melanin—the front of the crown is often blackish, the hind crown streaked with black, and the mantle strongly streaked with black on a sandy greyish ground. On the underside the breast and flanks have a pinkish apricot wash well developed. Friedmann separated northern Ethiopian birds as *fuertesi*, a supposedly darker form. The series in the British Museum which includes 11 *erlangeri* and 10 *fuertesi* suggests that northern birds may be on average slightly darker, but that the darker colour is also accentuated by wear. Very fresh *fuertesi* are not satisfactorily separable from *erlangeri*. I note therefore a possible trend to darker colour in the north of Ethiopia, but do not recognise *fuertesi*.

The Eritrean plateau is inhabited by a much lighter form. The upperside is lighter and more sandy, the black streaking above is reduced, the underside is much paler reddish pink on breast and sides, and the black patches at the sides of the breast are suppressed. This form must bear the name of *blanfordi*, of which *asmaraensis* is a synonym. Comparison of the type of *blanfordi* with *asmaraensis* shows that they agree in the grey axillaries and underwing coverts, pinkish breast and sides and long tail (52–56 mm.). The wing of Eritrean birds is 83–90 mm.; that of the type of *blanfordi* 86 mm.

Another red capped lark inhabits the plateau of British Somaliland, and for reasons which seem quite irrational, the name *blanfordi* has always been applied to it, although the type of *blanfordi* came from Eritrea. This Somali form now lacks a name since *blanfordi* has been shown to be the same as *asmaraensis*. I therefore propose:—

Calandrella cinerea daaroodensis subsp.nov.

Description: smaller than *blanfordi* (Shelley), wing 77–84 mm. (against 83–90 mm.), tail 43–49 mm. (against 52–56 mm.). Upper side more greyish sandy, less pinkish; cap paler and less sharply contrasting; underside white without pale pinkish apricot wash on breast and sides; under wing coverts whitish, not grey. Bill in skins paler, less blackish. *C. c. eremica* (Reichenow and Peters) of Arabia is darker and greyer above than *daaroodensis* without any sandy tinge, more blackish streaked on the mantle and darker reddish on the crown.

Type: male, Sheikh, British Somaliland. Collected by Sir G. Archer on 1st November, 1917. B.M. Reg. No. 23.8.7.2739. In the British Museum (Natural History).

Distribution: plateau of British Somaliland (Suksodi, Sheikh, Burao and Warsangeli).

Notes: I am indebted to Mr. K. Smith for drawing my attention to the anomaly of an Eritrean bird (*blanfordi*) being treated as identical with a bird from British Somaliland. The name is taken from the Daarood, the largest of the Somali clan families.

A note on *Certhilauda curvirostris*

by MR. C. M. N. WHITE

Received 21st September, 1959

For reasons already given in the "Bulletin", I have concluded that the genera *Certhilauda* and *Mirafra* cannot be kept separate. This affects the names of two forms of *C. curvirostris*.

(i) *C. c. damarensis* Sharpe 1904 is preoccupied by *Mirafra damarensis* Sharpe 1874. Fortunately *kaokoensis* Bradfield 1944 is available for this race since the slightly darker colour of Kaokoveld birds seems insufficient to make subdivision of the northern populations of South West Africa worthwhile.

(ii) *C. c. transvaalensis* Roberts (1936. Rustenburg) is preoccupied by *Mirafra africana transvaalensis* Hartert, 1900. This form of *curvirostris* seems to me to be separable from *semitorquata* by its brighter and clearer red upperside with a less olive tinge, and darker buff underside. It occurs from Fourteen Streams over the Transvaal to the Natal uplands, and intergrades rather widely over the Orange Free State with *semitorquata*. I therefore propose *Mirafra curvirostris infelix nom. nov.* to replace *Certhilauda semitorquata transvaalensis* Roberts, 1936, Ann. Trvl. Mus. 18, p. 261. Olifants Lock, Rustenburg, Transvaal.

"On varieties of the Tufted Duck, with an account of an unrecorded type of variation"

by DRS. JAMES M. & JEFFERY G. HARRISON

Received 30th September, 1959

Varieties of the Tufted Duck, *Aythya fuligula* Boie, would seem sufficiently rare to warrant placing on record three instances of a very unusual type. Previous papers dealing with variations in this species are worthy of note and, as usual, suggest that these may in fact have phylogenetic significance. The first of these appeared in 1954 when one of us published a note on the occurrence of a white facial band in a duck of the species which was "almost as extensive as that of an adult duck Scaup, *Aythya marila marila*"[1].

The second paper appeared in 1955 under the authorship of Mr. Bryan Sage[2] in which he discusses the relationship of some ducks of the Genus *Aythya* Boie, affirming the biological principle of autophoric reverse mutation already advanced by us in previous papers and confirming the close affinity between the various species in this Genus. In this paper Mr. Sage also refers to the appearance of white feathers in the under-tail coverts.

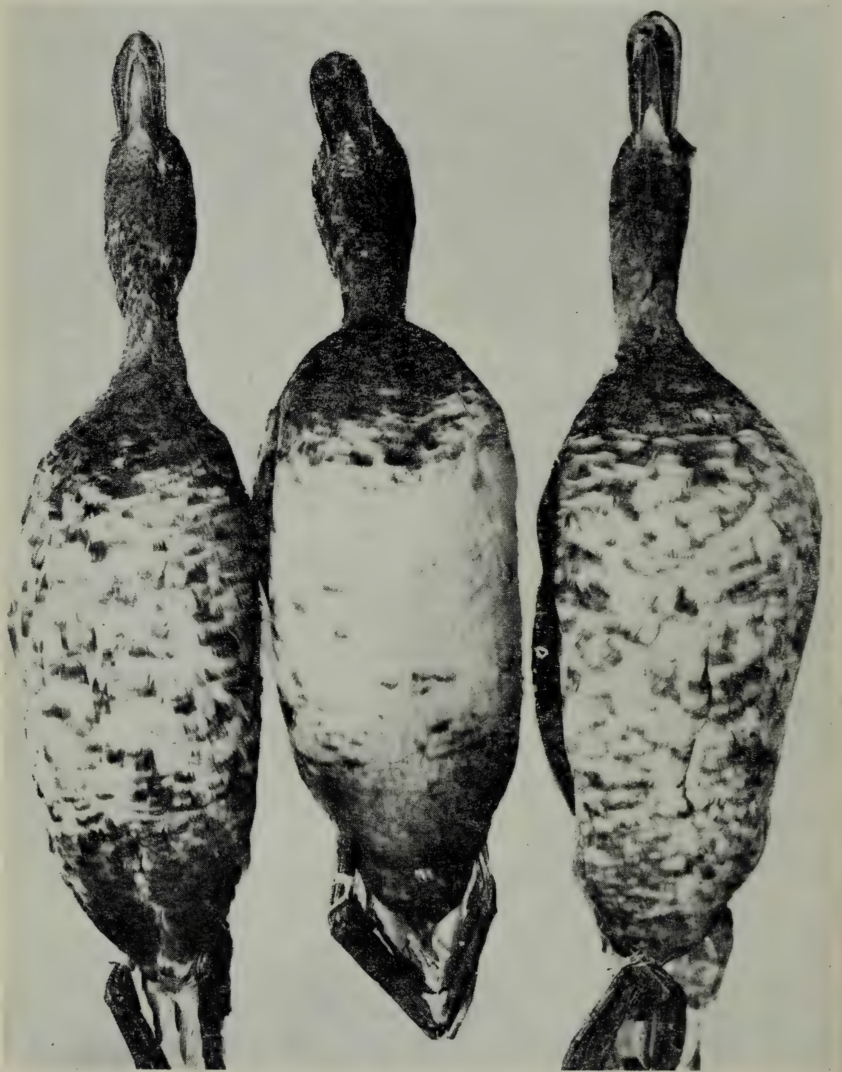


Plate 1 Variant Tufted Duck with darkened underparts

In a paper in 1957 Mr. Eric Gillham[3] gives an account of the occurrences of both these characters based on a close study of this species in St. James's Park, London, between late April and early October in the years 1953–56 inclusive. He has established that the condition can occur both in immatures and rather commonly in adult females in their post-nuptial moult. This latter circumstance definitely rules out any suggestion of partial albinism, as has already been stated by Sage. In a further paper, Gillham[4] describes a number of individuals exhibiting a patchy isabelline mosaic and also partial albinism, but of quite different distribution.

The variety now described and of which we have three examples, is distinctive in that the normal pure white of the belly is strongly flecked with dark chocolate brown feathers and we surmise that were such an individual seen in the field, considerable speculation as to its identity might result! The particular features of these variants would of course, be hidden when the birds are on the water.

The first specimen to come to us was an individual which could not be positively sexed. It was shot at Fordingbridge in Hampshire on 8th September, 1945 and was given to us as a skin by Mr. C. W. Mackworth-Praed (Plate I, right). The second, a first winter female (Plate I, middle) was bred in captivity by Dr. Edmund Gleadow and died in November, 1958. This bird shows the condition in an incipient stage. The third example (Plate I, left) is also a female and its exact age is unknown, but it was thought to have been wild-bred at Sevenoaks, Kent in 1958. It appeared on the Kent Wildfowlers' Reserve there in 1959 and was caught in the duck trap on 13th August, ringed, photographed and released. This bird was killed by a fox on 4th September, 1959 and was fortunately not too damaged. In the three weeks, there had been considerable advance in the dark flecking. When previously handled, the condition closely resembled the middle bird in the plate. All three birds show a suggestion of a white chin spot, as well as white feathers at the base of the bill, being most pronounced in the right hand bird.

At present we are unable to state whether this mutation occurs in both sexes. The significance of the white frontal band has already been discussed and correlated with another species in the Genus *Aythya*. The tentaive suggestion that the tendency towards a darkening of the underparts is a phylogenetic link with some of the other dark-bellied species in this Genus cannot be lightly dismissed. It is to be remembered that in the Tribe *Aythyini* are included such forms as the Red-crested Pochard, *Netta rufina* (Pallas), the South American and African Pochards, *Netta erythrophthalma*, the Rosy-bill, *Netta peposaca* (Vieillot) and the New Zealand Scaup, *Aythya novae-seelandiae* (Gmelin), all of which are distinguished by having dark underparts.

In conclusion, we would express our grateful thanks to Mr. C. W. Mackworth-Praed and Dr. Edmund Gleadow for the gift of the specimens and to Mr. George Wallis of the Kent Sand and Ballast Company for allowing us to manage his ballast water as a wildfowl reserve, on which the third specimen was found.

References:—

[1] Harrison, Jeffery G. "*On an unusual Tufted Duck and Smew*" Bull. B.O.C., Vol. 74, pp. 53–4. 1954.

[2] Sage, Bryan L. "*Comments on the Relationship of some Ducks in the Genus Aythya Boie*" Bull. B.O.C. Vol. 75, pp. 53–4. 1955.

[3] Gillham, E. H. "*Field Notes on the White Feathering at the Base of the Bill and White Under-tail Coverts in the Tufted Duck*" British Birds, Vol. L, pp. 389–392. 1957.

[4] Gillham, E. H. "*Variations of plumage colouration in the Pochard Aythya ferina and the Tufted Duck Aythya fuligula*" Bull. B.O.C., Vol. 79, pp. 87–8. 1959.

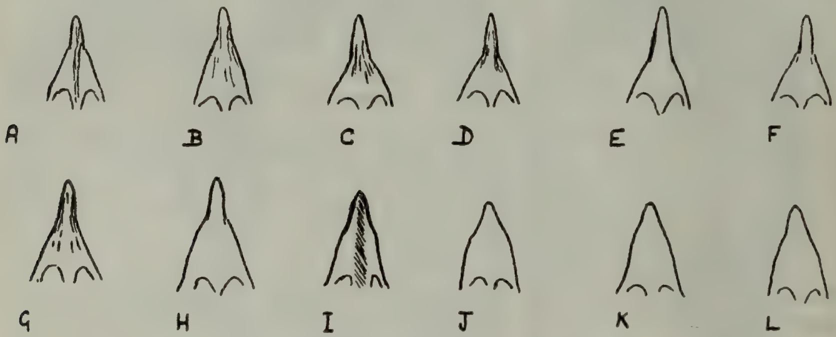
Some Taxonomic Characteristics of the genus *Lagonosticta*

by Mr. C. J. O. Harrison

Received 18th September, 1959

INTRODUCTION.

Within the estrildine waxbills it is comparatively easy to recognise the existence of the genus *Lagonosticta*, the Fire-finches, but it is difficult to find a series of taxonomic characteristics which are common to all the species which comprise it, and will separate them from those of other genera. I have previously examined the behavioural characteristics of some of these species and have come to the conclusion that the Lavender Finch, *caerulescens*, is not a member of this genus and has erroneously been placed in it (Harrison 1956).



Bills of some waxbills viewed from above. (Approx. x2)

A. *L. senegala* B. *L. nigricollis* C. *L. larvata* D. *L. vinacea*
E. *L. rubricata* F. *L. jamesoni* G. *L. landanae* H. *L. rara*
I. *L. rufopicta* J. *E. perreini* K. *E. caerulescens* L. *E. eelpoda*

CHARACTERISTICS

If we remove the Lavender Finches we can begin by saying that *Lagonosticta* tend to be squat, ground-feeding waxbills and usually lack the gregarious tendencies of the genus *Estrilda*. In addition to the general plumage pattern two characteristics which have been used to separate these species are the possession of a slight lateral compression of the bill and the presence of small white dots on the sides. To this I should like to add the possession a distinct coloured eye-rim.

1. Plumage.

If the general plumage pattern of the Fire-finches is examined two different groups are apparent. In the first the species have a mainly red and brown colouration with a red rump and red-and-black tail. It comprises *senegala*, *landanae*, *rara*, *rufopicta*, *nitidula*, *jamesoni*, and *rubricata*. *Nitidula* is peculiar in that it lacks the red on rump and tail, but it is characterised by a general absence of the red pigment so apparent in the others which is here only present as a vinous patch on the upper breast. There is some sexual dimorphism in all species except *rufopicta* and *nitidula*.

In the second group the plumage is grey or vinous-red, with scarlet rump and tail. The cock has a black facial mask. There are three species, *vinacea*, *larvata*, and *nigricollis*.

The difference between these two groups is greater than that between the latter group and the two Lavender Finches, one of which (*caerulescens*) is grey with scarlet rump, tail-coverts, and tail, while the other (*perreini*) is similar but has a black tail.

2. Bill Compression.

With the exception of *rufopicta* the bills of all the Fire-finches possess a distinct lateral compression half-way, or two-thirds of the way, between base and tip. As can be seen from the sketches its distinctness varies according to the length and stoutness of the bill. In the case of *rufopicta* there is a slight compression towards the tip but the bill is thick, and this might not be recognised as homologous with that of the other species. There is no appreciable narrowing in the case of *caerulescens* but *perreini* does possess a bill that narrows near the tip and so this characteristic is only partially useful. It might be argued that *perreini* links *caerulescens* with the Fire-finches via *rufopicta*, the difference being no greater than that already displayed within the genus. With the exception of *senegala* the bills of *Lagonosticta* tend to be longer and more prominent when compared with the shorter and thicker bills of *Elstrida*.

3. White Spots.

The possession of small white spots on some of the feathers of the sides is a characteristic which requires more careful examination. At one time it led to the inclusion in *Lagonosticta* of birds such as the Twinspots (*Hypargos* spp.) since these have flanks heavily spotted with white.

The most conspicuous plumage characteristic of *caerulescens* and *perreini* is patch of colour formed by the red rump and upper and under tail-coverts. In the case of *caerulescens* there is in addition an area of white spots bordering these coverts along the rear edge of the flanks. Because of these spots *caerulescens* was placed in *Lagonosticta* while *perreini* was left in *Estrilda*, but I am of the opinion that these are not homologous with the white spots of *Lagonosticta* and must be considered as part of the conspicuous colouration of the tail region of the former species.

If the possession of white spots on the plumage is to be used as a characteristic for defining *Lagonosticta* then the *position* of such spots must be emphasised.

Rubricata and the cock of *senegala* may be considered as typical in having a small group of white spots at either side of the lower breast just forward of the carpal joint of the closed wing when this is folded against the bird's side. In both these species the spots tend to be minute and in some cases are only noticeable when a dead specimen is closely examined.

The *senegala* hen has more numerous spots which are present over much of the breast but tend to be concentrated towards the sides. In *nigricollis*, *larvata*, *vinacea*, and *jamesoni* areas of small white spots are present as in *rubricata*, but they tend to be more numerous and to extend onto the forepart of the flanks. In *landanae* they tend to be fewer but larger and more conspicuous. In *nitidula* the spots are spread across the breast, and in *rufopicta* these take the form of tiny white terminal bars on the feathers of the breast. In *rara* the spots are absent but there is no doubt about its affinities, since in appearance and behaviour it is very close indeed to *rubricata*.

We may say then that in *Lagonosticta* most species possess a group of small white spots, sometimes very inconspicuous, which are centred at the sides of the breast near the carpal joint of the closed wing, but which may extend over the whole breast and foreflanks, or may be present as tiny white terminal bars on the feathers of this area.

The Australian Crimson Finch (Poephila phaeton) fits this description very well, being a red and brown bird with a head superficially similar to that of *rufopicta* and with a small group of white spots in just the right place. Its precise affinities are still uncertain.

4. Eye-Rim Colouration.

There is one characteristic which is relatively conspicuous in the Fire-finches and absent in most of the other waxbills and that is the possession of a distinctly coloured rim around the eye. This is formed by the eyelids and becomes faded and inconspicuous after death. If it is not recorded at the time that the bird is collected it cannot be discovered from the preserved skin. This fugitive tendency is probably the reason why it has not been adequately recorded. I have found it mentioned so far in only one work—Chapin's "Birds of the Belgium Congo"—and very few museum skins bear any reference to it. Yet in life it is very conspicuous in species such as *senegala* where that of the cock is bright yellow against red plumage; and in the cock of *vinacea* where it is pale yellow on black.

There are sexual differences of colour in some species, and there appear to be age differences, those of young birds being darker or different from those of adults. I have no records as yet to show whether there is any variation due to physiological causes such as the development or recession of the gonads during the breeding cycle.

I have been able to establish the presence of a coloured eye-rim in every species except *nitidula*. In the list that follows I have indicated whether the record was based on the examination of a live bird, or from the label of a skin in the British Museum (Natural History) in which case I have quoted the register number, or from published sources.

senegala	♂ Bright yellow (live). ♀ Silvery-grey (live).
rubricata	♂ ♀ almost white (live). pink (Chapin).
landanae	♂ ♀ pale rose-madder (1909.8.5.166: 1910.5.6.1402,–3,–5).
	♂ greenish-grey (1910.5.6.1404).
jamesoni	♂ pinkish-white (1932.5.10.1355).
rara	♂ light pink (live). ♀ grey (1923.8.7.2608).
	Imm. ♂ yellowish-grey (1923.8.7.2054) yellowish (1923.8.7.2069).
	♂ ♀ light grey (Chapin).

rufopicta	♂ silvery-grey (live). ♂ ♀ light bluish-grey (Chapin).
vinacea	♂ pale yellow (live). ♀ grey (live).
nigricollis	♂ bluish-grey (1916.12.1.690) ♂ light blue (1916.12.1.689).
larvata	♂ ♀ greyish-blue (Chapin). ♀ light blue (1916.12.1.729).

This characteristic is not a wholly exclusive one. The Violet eared Waxbill (*G. granatina*) possesses a coloured eye-rim, as does the Crimson Finch, and the genus *Pirenestes* may also do so; but taken in conjunction with the other characteristics mentioned it may serve to define more clearly, and to isolate, *Lagonosticta*.

ACKNOWLEDGEMENTS.

I should like to thank the trustees of the British Museum (Natural History) for permission to examine the specimens in the collection, and to refer to these.

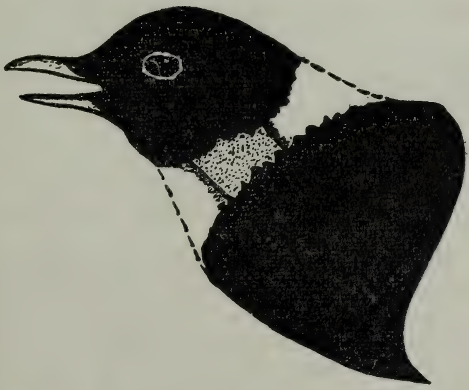
References:—
Chapin, J. P. (1954) *Birds of the Belgium Congo*. 4: 517–32. New York.
Harrison, C. J. O. (1956) Some fire-finches and their behaviour. *Avic. Mag.* 62: 128–41.

A Male Blackbird with a "Disfigured" Plumage

by IAN D. WOODWARD

Received 6th October, 1959

From about the middle of April, 1958, and subsequently until the beginning of September, an adult ♂ Blackbird *Turdus merula* Linnaeus with a peculiar plumage "disfigurement" was noted at Barnard Castle, Co. Durham, almost every day during this period. The "disfigurement" was in the region around the bird's hind neck and throat (see figure below), giving the bird a shaven appearance. The area containing no feathers was *c.* ½ .5in. –1in. in height. I might add, that this "collar" was



in no way similar to the bare patches on the necks of females following sexual behaviour.

4 FEB 1960
PRESENTED

An Analysis of the Material Contents in the Nest of a Robin

by MR. IAN D. WOODWARD

Received, 1st September, 1959

Near the end of March, 1959, I analysed the contents of a Robin's *Erithacus rubecula melophilus* Hart., nest which was situated in my garden shed. The following is a précis of the results :—

Leaves—There were 272 *complete* leaves and 95 *fragments* of leaves. The longest leaf measured 12.4 cms., the shortest 1.5 cms., average 6.1 cms. Three Birch (*Betula pendula*) leaves were still intact on the stork.

The variety of leaves included mostly Oak (*Quercus Robur*) and Ash (*Fraxinus excelsior*); other varieties consisted of: Silver Birch (*B. pubescens*), Willow (*Salix* spp.), Elm (*Ulmus* spp.), and Alder (*Alnus glutinosa*).

Of the *flower leaves* were: Common Mallow (*Malva sylvestris*), Celandine (*Ranunculus* sp.), and, of interest, 12 leaves from Ragged Robin (*Lychnis flos-cuculi*).

Main bulk of nesting-materials—The main part of the nest, which would fill an average sized sauce-pan, contained 50% grasses (*Gramineae* spp., *Poaceae* spp.) and 40% Mosses (*Bryophyta* spp.) (dried)—although I found amongst the materials 2 wisps of grass and about a dozen shreds of moss still freshly green—after the nest had been completed for over two weeks.

Woven and moulded into the nest were a number of items worth mentioning (see Table I), including 9 lumps of plaster—these may have dropped from the ceiling and trodden in by the youngsters.

Situation of nest—The nest itself was positioned between the top of a post and hanging Bamboo-canes, at a height of 6ft. 8in. from the floor.

TABLE I.—MISCELLANEOUS MATERIALS USED IN THE CONSTRUCTION OF A ROBIN'S (*Erithacus rubecula melophilus* Hart.) NEST.

Qty.	*Material(s)*	*Gen. sp.*	*cms.*
1	Barley ear with stem	*Hordeum* sp.	20.0
2	Barley stems (without ears)	*Hordeum* sp.	6.8 & 11.2
1	Piece of newspaper	—	2.0 x 0.9
2	Sycamore pods	*Acer pseudoplatanus*	4.1 & 4.3
2	Lengths nylon cord	—	10.0 & 12.0
1	Thorned stem	(Gen. sp.?)	5.1
1	Wood splinter	—	3.3
1	Thick Grass root and stem	*Gramineae* spp., *Poaceae* spp.	8.1

It should be noted that of the varieties of trees referred to, nearly all were in close proximity of the nest habitat; the exceptions being Willow (spp.) and Alder: the nearest of these two varieties known to the writer being *ca.* ½ mile away. The leaves from the flowers were all obtained from in, or close to the Robin's territory. The nearest grain field at the time was *ca.* 1 mile away, but it is most likely that the Barley (spp.) ears and stems listed were blown towards the nesting vicinity by the strong winds that were iminent during the period of nest building.

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DINNERS AND MEETINGS FOR 1960

16th February, 30th March, Joint Meeting with B.O.U., 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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BULLETIN

OF THE

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3 MAR 1960
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Edited by
Dr. JEFFERY HARRISON

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BULLETIN
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BRITISH ORNITHOLOGISTS' CLUB

- 3 MAR 1960
PURCHASED

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The five hundred and seventy-ninth meeting of the Club was held at the Rembrandt Hotel, S.W.7., on Tuesday, 16th February, 1960, following a dinner at 6.30 p.m.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 18; Guests, 5; Guest of the Club, Mr. Peter Olney; Total, 24.

Duck Food Research

by MR. P. J. S. OLNEY

A Summary of the talk given to the Club on 16th February, 1960

The importance of food as a factor of population significance is obvious in the sense that there is some sort of relationship between population size and density and the quality and quantity of food available and consumed. The extent of this relationship can only be determined by the detailed study of a particular species. In this country few such studies have been made and then usually only when the bird concerned is of economic interest.

The literature on the food of British ducks is extensive, but in general suffers from two faults. Either it records only the unusual or conspicuous food or feeding-habit, or, and this is the most common error, it is too vague. To be of any value, identification of foods taken must be as precise as possible. Most textbooks, often because of their inherent need to précis, contain only summarised information, which can be not only worthless, but misleading. There have, however, been a small number of useful studies (Campbell, 1936, 1946, 1946, 1947; Höhn 1948) on various species which indicate the type of results needed.

The means of study will vary with the species concerned, but without doubt the most accurate results are obtained from stomach analyses. This often involves difficulties in the specific identification of food fragments, and since different materials are digested at different rates those foods present are not always in the original proportions consumed. The problems involved in quantitatively assessing the foods taken will vary from species to species, depending on the type and amount of food taken. Hartley (1948) clearly summarises the various methods of assessment and the inherent problems incurred in each. Only populations numerically large enough to withstand the loss of an adequate sample can be studied in this way. Alternative methods must be used for smaller populations. In ducks and geese this is difficult, for apart from field observations there are few alternative methods available. Regrettably ducks do not have a crop such as pigeon and gallinaceous species do, where food is temporarily held. Faecal examination, though it may not provide the full diet-sheet, can produce useful information as to what is being eaten. Ranwell and Downing's (1959) use of this method with Brent Geese (*Branta bernicla*) is an excellent example of its value. They were able to show a distinct seasonal pattern of feeding correlated with the main growth periods of the different food plants. Gillham (1956) has shown similar seasonal feeding behaviour in Mute Swans (*Cygnus olor*), much of her work being based on field observations. In all food studies, essential supplementary information can often only be produced by continual field observations. A knowledge of how, when and where the food is taken, and to what extent the food supply is depleted are necessary facts which can only be obtained by field work.

Since 1957 the Wildfowl Trust has been carrying out a study of the food and feeding habits of various British duck. This has been made possible by a close liaison with wildfowlers (mainly W.A.G.B.I. members) who have sent in viscera of shot birds. The main experimental area has been in Kent, where a continual sample from some of the Medway islands has been sent in for the last three years. The results of analysing this sample—mainly Mallard (*A. p. platyrhynchos*), Teal (*A. c. crecca*) and Wigeon (*A. penelope*)—correlated with a botanical survey of the areas involved has shown what sort of food is available and the preferences, if any, of the birds concerned. The diet of any one species will probably vary from area to area, throughout the year and from year to year. Though this survey is confined to the shooting season, variations are distinguishable. Samples have been obtained from a wide variety of habitats, and though the largest numbers have been of birds shot over saltmarsh areas, many have come from inland waters. Thus, there are examples from watermeadows, rivers, reservoirs, smaller stretches of water and from a number of flight ponds. These latter are of particular interest as they do show that the birds, though artificially fed on grain, do take considerable amounts of naturally occurring foods. It is not always possible to consider them as separate populations, as often a bird is shot feeding in one area, and yet is still in the process of digesting a meal taken from a different type of habitat. Thus a Mallard gizzard may be full of saltmarsh plant seeds, whilst the oesophagus is crammed with barley grains, indicating that the bird has been feeding on two entirely different habitats within a short time.

Once the food habits of a particular species are known and the information on what food is available, then conservation measures can be envisaged. A number of experimental trials have been started on the propagation of plants of known food value and it is hoped that this work will expand as more information becomes available.

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Höhn, E. O. (1948) London Bird Report 12 : 36–38.
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Mr. Olney went on to mention lead poisoning in wildfowl and the first part of his paper now follows.

Lead Poisoning in Wildfowl

by Mr. P. J. S. Olney

Part One

Summary

The signs and pathology of lead poisoning are fully described, with special reference being made to diagnostic features which could be used in any quantitative assessment.

The amount of lead shot which constitutes a fatal dose is discussed. It is estimated that 60–80% *of adult Mallard with one ingested pellet will succumb, if they are feeding on a diet of wild seeds.*

The availability of lead shot pellets to wildfowl on a particular body of water is determined by (1) *the shooting intensity and number of shot deposited on the bottom,* (2) *the nature of the bottom material and* (3) *the size of the shot pellets involved.*

The incidence of ingested pellets can be determined by fluoroscopic examination and examination of viscera material, and will vary with the species and its feeding habits.

Tables showing the incidence of ingested lead shot in four species of dabbling ducks in this country and in comparable species in North America are shown and discussed. There is a marked similarity between Mallard in this country and North America carrying ingested lead—6.56% *and* 6.79% *respectively.*

The reproductive capacities of poisoned wildfowl do not seem to be seriously affected.

The variations in mortality rates with different ages and sexes are attributed primarily to differences in the quality and quantity of food consumed.

Means of reducing or eliminating losses are discussed, including the use of non-toxic shot, encouraging the growth of natural foods most likely to alleviate the poisoning effects, and more care in the choice of shot range. As yet no satisfactory non-toxic shot has been produced.

Lead poisoning, caused by the actual ingestion of lead pellets, is a significant mortality factor amongst wildfowl in many parts of the United States, and has caused considerable concern to conservationists for many years. Its occurrence in this country has rarely been recorded in wildfowl (Clapham, 1957 and personal comm.) or in any other group (Keymer, 1958 and personal comm.), and no quantitative assessments have been made. The purpose of this paper is to show the nature of the disease, its implications, and the various methods which can be used in evaluating the losses due to lead poisoning.

That fatal results are caused by birds of many species—ducks, geese, swans, coots, rails, partridge, and pigeons—eating lead pellets, whether as food or grit, has been recognised since the 1870's (Phillips & Lincoln, 1930). Grinnell (1894, 1901) described the symptoms that appeared following the ingestion of shot by swans, geese and ducks at Currituck Sound on the coast of California, and he also noted three places in Texas where lead poisoning had occurred. Bowles (1908) recorded similar symptoms in a number of Mallard (*Anas p. platyrhynchos*) and McAtee (1908) in the same year gave an account of lead poisoning in Canvasbacks (*Aythya vallisneria*). Wetmore (1915, 1919) not only reported lead poisoning in Whistling Swans (*Cygnus c. columbianus*), Mallard and Pintail (*Anas a. acuta*), but also carried out the first experimental work on lead poisoned ducks, from which he described the signs and postmortem findings. Since Wetmore's pioneering work many instances of plumbism have been observed and recorded (Munro, 1925, Van Tyne 1929, Howard 1934, Pirnie 1935, Shillinger & Cottam 1937, Jones 1939, Jones 1940, Roberts 1940, Adler 1942, Mohler 1945, Bellrose 1947, Ayars 1947, Yancey 1953, Wisely & Miers 1956, Bellrose 1959).

In some instances the number of deaths directly attributable to lead poisoning reaches spectacular proportions. Bellrose (1959) cites an outbreak in the Claypool Reservoir area near Weiner, Arkansas, where between mid-December 1953 and mid-February 1954, an estimated 16,000 ducks, most of them Mallard, succumbed to lead poisoning. This represents a 6.4 per cent. mortality among the 250,000 duck present. A further example quoted by Bellrose took place at Dalton Cut-Off in Chariton County, Missouri in 1949, where it was estimated that in a population of 10,200 duck, again mostly Mallard, 1,000 died from the effects of ingesting lead pellets.

Signs & Pathology

The signs of lead poisoning in wildfowl are recognisable before and after death and have been described by a number of people, including Wetmore 1919, Howard 1934, Shillinger & Cottam 1937, Alder 1944, Jordan & Bellrose 1951, Coburn, Metzler & Treichler 1951, Elder 1954, and Wisely and Miers 1956. The following account of signs and pathological conditions is based mainly on their work with a few observations of my own. The general pathology is similar for wild and captive birds with ingested lead pellets, induced or freely-taken, and for wild-caught birds with an administered lead salt solution. Typically there is a definite pattern with the development of each symptom being followed by an increase in its severity, usually an illness of short duration, ending in death.

One of the first signs to appear with experimental birds is a marked lethargy with a lessening resistance to being handled and a quick return to a resting position. This has been interpreted as the beginning of muscle paralysis, though it is probably correlated also with a lowered food intake, where consumption falls to a level below minimum nutritional requirements. At the time of death the body weight may average only 40 per cent. of the original weight, with a reduction in, or total absence of any fatty tissues. Bright green droppings (due to excessive bile production) are commonly observed within two days of lead ingestion. Frequent water drinking is usual and a greenish diarrhoea is produced with in some cases a green bile staining of the feathers in the ventral region. By the third and fourth weeks the sternum becomes prominent and there is a characteristic 'roof-shaped' positioning of the wings as they are held over the back, with an associated dropping of the chest and high carriage of the tail. In some cases the wings of sick birds are extended downwards in a 'wing-drop' —analagous to the characteristic wrist-drop in human lead poisoning.

The most striking post-mortem feature is the extreme emaciation with a loss or reduction of fat deposits in the body cavity. Particularly noticeable is the reduction of the main flight muscles. Flaccid muscle tissue is a general finding. There is usually a marked flabbiness of the heart muscles, exaggerated by the small amount of impoverished blood and often a watery effusion in the pericardium. There is generally a marked reduction in the size of the liver, which histologically was shown by Coburn, Metzler and Treichler (1951), to be due in part to necrosis. More than the normal amount of bile is present in the gall bladder and duodenum, and characteristically it is bright green. Regurgitation of bile into the gizzard and proventriculus is common, though it is doubtful if this should be taken as a definite sign of lead poisoning as was done by Anderson (1959). The gall bladder may be enlarged to five times its normal weight. Atrophy of the gizzard muscles is a regular observation. The horny pads of the gizzard may be very stiff, abnormally rough and easily peeled off. Commonly the gizzard is ulcerated and the proventriculus impacted (44 per cent. of the penned Mallard used by Jordan & Bellrose 1951). Anaemia is a constant finding with definite changes in the blood. These changes, particularly affecting the erythrocytes, follow a consistent pattern according to Coburn *et al.* (1951). In their experimental Mallard, dosed with an aqueous solution of lead nitrate, anisocytosis (inequality in size of erythrocytes) was observed early on, followed by poikilocytosis (irregular shape of erythrocytes). In the majority of cases there was a decrease in the numbers of erythrocytes. The normal average number for Mallard is 3.06 millions per cubic millimetre according to Magarth & Higgins (1934), though it will vary with the sex and age of the bird. Though reductions in erythrocyte numbers of up to 40 per cent. have been noted by Elder (1954), and it has been suggested that the decrease varies with the dosage and could therefore be used as a measure of toxicity, there does also appear to be a considerable variation between individuals of the same species.

The characteristic basophilic stippling of the erythrocytes first noted by Ehrlich (1885) and correlated with lead poisoning by Behrend (1899) which is so apparent in mammalian plumbism, is not a consistent finding in avian species. Coburn *et al.* (1951) state that they had rarely observed stippling in any avian species. However, Johns (1934) in a careful survey of the blood of wild duck poisoned by lead pellet ingestion, found extensive basophilic stippling. In chronic cases numerous stippled cells begin to appear, coincidental with unmistakable changes in the nucleus. It was suggested that the direct combination of lead with phosphates on the surface of the erythrocytes and the local liberation of a weak acid, as shown by Aub, Reznikoff & Smith (1924) is sufficiently toxic to produce actual cell death. This has since been disputed by Jandl & Simmond (1957).

Whatever the toxic mechanism is, the stippling produced by a basophilic stain is considered to be characteristic of a *dying* cell, seen in the sequence of events in the usual maturation of semi-mature cells in the peripheral circulation. The disagreement between the work of Coburn *et al.* and Johns may possibly be due to differing dosage rates and the difference in acute and chronic cases. More detailed work is needed before stippling of the erythrocytes can be used as a diagnostic character in avain lead poisoning.

It was clearly demonstrated by Jordan & Bellrose (1950) that the toxic effects of ingested shot was due to the lead fraction in the pellet alloy. Abrasion of the pellets in the gizzard results in the circulation of complex lead compounds in the blood stream throughout the body. It seems probable that soluble lead salts are formed in the presence of gastric juices (Cantarow & Trumper 1944). These may form albuminates, peptonates and other more soluble compounds which are readily absorbed and distributed throughout the tissues by the blood stream. Lead compounds may be deposited in varying amounts in the liver, kidneys, bones, nerve and muscle tissues.

Chemical analyses of various organs from lead poisoned birds can be used as diagnostic aids, though the rate of deposition is not directly proportional to the dosage level or to the time of poisoning. Coburn *et al.* (1951) found that the most significant increases in lead content were in the liver, where the average value for the poisoned birds was forty times that for the normal controls. Likewise, the lead content of skeletal material from poisoned birds was seven times higher than that found in the controls. Adler (1944), from his work with lead poisoned Canada Geese (*Branta c. canadensis*), has suggested that the liver is the best organ to choose for chemical analysis in aiding diagnosis. By using his approach a more accurate index of lead poisoning may be had. Malysheff (1951) cited by Bellrose (1959) made chemical analyses of the bones and liver of wildfowl taken in the Lower Fraser Valley of British Columbia. He found that 52.1 per cent. of the 79 Mallard he examined had ingested lead at one time or another in their lives, though only about 16 per cent. had actually got lead in their gizzards. Recently, Schöberl (1958) has suggested that either a photometric method, using diphenylthiocarbazone, or a polarographic method are most suitable for determining the amount of lead in various tissues.

It seems that the liver is efficient in removing lead from the portal blood but is not so effective in removing it from the systemic circulation. It is possible that lead reaching the liver in the portal system is excreted in the bile and may subsequently undergo reabsorption: this cycle preventing or limiting the amounts of lead that reach the systemic circulation (Cantarow & Trumper, 1944).

The gross pathologic findings are very similar to those produced by starvation, as has been well shown by Jordan (1951, 1953). The suggestion is that death from lead poisoning may be due to, or accelerated by, starvation caused by the paralytic inactivity of the gizzard muscles and a low food intake. Jordan (1951) and Jordan & Bellrose (1951) outlined experiments where they measured the food intake daily of Mallard dosed with one pellet, and fed exactly that amount to a companion control the following day. In nearly all pairs, the weight loss curves, symptoms, gross appearance of viscera and muscles, and mortality were similar, though no impaction of the proventriculus was shown by the deliberately starved birds. Jordan (1953) showed that in intentionally starved Mallard the loss of weight in the liver, kidneys and heart averaged 69.4, 26.8 and 36.7 per cent. respectively for males and slightly less for females, with an enlargement of the gall bladder (3 times normal weight) in both sexes.

Fatal Dosage

The amount of lead shot which constitutes a fatal dose varies with the species, the age and sex of the bird, the individual, its general condition, whether it is hand reared or wild, the feeding habits of the species, and often from author to author. In comparing American work on this subject with available British figures, account must be taken of the differences in shot size. Most of the American work on duck has been done with their No. 6 shot (225 pellets per ounce) or No. 5 (170). Fortunately these shot sizes compare favourably with the sizes usually used in duck shooting in Britain: No. 5 (220) and No. 4 (170). Wetmore (1919) found that six No. 6 shot were always fatal with hand reared Mallard. Jordan & Bellrose (1950) found that *one* No. 6 shot was fatal for six out of 10 wild Mallard fed on a diet composed wholly of natural-growing seeds and for seven out of 10 wild Mallards fed on a diet of mixed grains. As a large proportion of the Mallard in England during the shooting season are feeding on a high percentage seed diet (Olney, unpubl. mat.), Jordan & Bellrose's work has obvious importance. They concluded that 60-80 per cent. of adult wild Mallard carrying *one* pellet were likely to succumb, if they depended upon diets of wild seeds. It is apparent from their work (1950, 1951) and that of Elder (1954) that the nature of the diet rather than the dose of ingested lead was the more important variable. The effects of lead poisoning are considerably reduced when various leafy, aquatic plants are introduced into a grain or wild seed diet. *Ceratophyllum demersum*, *Potamogeton pectinatus*, *Lemna minor* and *Lemna trisulca* were found to be particularly beneficial—probably by acting as buffers and lessening the mutual grinding effect between seed and pellet. In this country, probably only the two duckweed species (*L. minor* and *L. trisulca*) are taken in appreciable quantities by Mallard, Teal (*Anas c. crecca*) or Wigeon (*Anas penelope*) during the winter months.

Availability

The frequency of occurrence of ingested lead pellets will vary not only with the availability of the pellets, but also with the feeding habits of the different species. Most of the shot fired in the pursuit of wildfowl will in fact fall over water, sink and, depending on the nature of the bottom material, be liable to become ingested by feeding birds. The primary limitation on availability will depend on the shooting intensity and the amount of shot which is deposited on the bottom. It is impossible, and it would certainly be tactless, to estimate accurately the number of cartridges fired for every duck or goose killed. Nevertheless, in certain parts of the country, particularly where most of the shooting is done from behind butts (hides) or over flight ponds, the number of pellets which do not hit a bird, and are deposited in the adjacent mud, must be very high. There will obviously be an increase in susceptibility as the shooting season progresses. The pellet numbers actually available to birds will depend to a large extent on the type of bottom material, and on the size of shot used. This has been shown to be true by Bellrose (1959), using lake beds of different firmness and sinking ceramic pipes in each area with three shot sizes in the top soil of each. By sifting the mud contents a year later, he was able to show that movement of the pellets depended on the degree of firmness of the soil and on the size of shot. The smaller the size of shot, the more likely was it to be dislodged and scattered.

The actual depth to which the bird will dabble in the mud will depend on the species involved and on the food available or preferred. Species of duck differ to some extent in preferred feeding depths, so that the depth of water above the bottom may also determine the availability of pellets. Dabbling ducks usually feed in waters of less than 15 inches in depth, whilst diving ducks feed at depths of many feet, though Pochard (*Aythya ferina*) and Tufted Duck (*Aythya fuligula*) may and often do feed in shallower water. Other species of duck will rarely sift through bottom muds for food, relying more on leafy aquatic plants (Gadwall, *Anas strepera*), or actually grazing on various grasses and seaweeds (Wigeon, Olney 1957). That the incidence of ingested lead varies considerably with the species and its feeding habits is well shown by American figures (Shillinger & Cottam 1937, Cottam 1939, Bellrose 1951, Anderson 1959). It is probable that the pellets are taken by the birds accidentally or deliberately as or with grit, or accidentally with food material.

To be continued.

Tuberculosis in a wild Pochard and remarks on the recognition of disease by predators

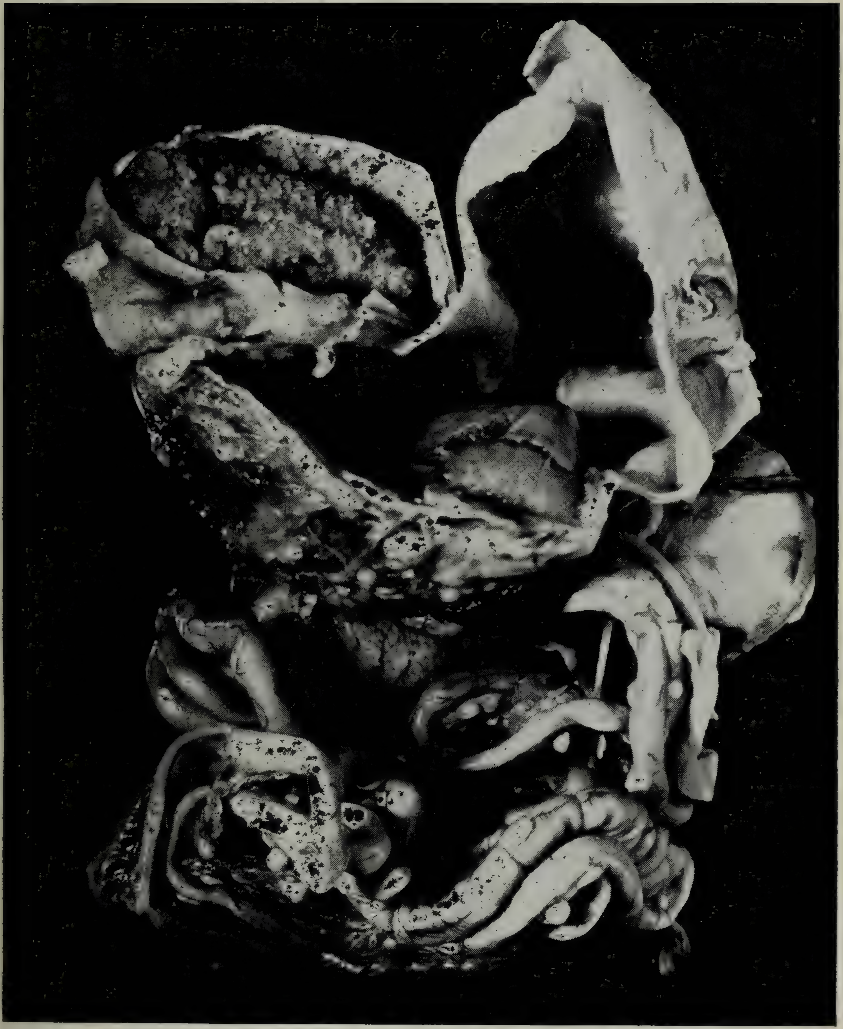
by DRS. JAMES M. & JEFFERY G. HARRISON

Received 1st November, 1959

On 19th August, 1959 Major General C. B. Wainwright and Mr. Roy King found an eclipse drake Pochard, *Aythya fuligula* (Linnaeus), on Abberton Reservoir, Essex, swimming weakly and with its neck badly lacerated by some predator, which judging by the tooth marks was most likely to have been a fox or an otter. It was also very wasted and the bird was killed and given to us on the same day.

On examination, apart from being very wasted, the belly was extremely distended. On opening the body, this distension was found to be due to a grossly thickened, yellowish-white thoraco-abdominal air-sac, containing about a quarter of a pint of straw coloured fluid. The pericardium was similarly thickened and there was an advanced plastic pericarditis, the whole heart looking as if it was covered with soft butter. Lying behind the air-sac, the liver was enlarged and studded with many small, hard, whitish nodules, while other nodules were present on the visceral surfaces of the gall-bladder and intestines, which were matted together by adhesions. One nodule had eroded the eighth right rib. Many of these features can be seen in the picture of the specimen after dissection.

A direct film from a liver nodule showed that numerous pleomorphic acid-alcohol fast bacilli were present. Histologically, a section of the liver stained with haematoxylin and eosin presented a picture of miliary tuberculosis with multiple caseous areas largely destroying the central area of each liver lobule, with small round-celled infiltration and giant cell systems surrounding the caseation, as a prominent feature, leaving only a narrow zone of liver cells.



Internal organs of the Pochard after removal

Top left—heart, with part of pericardium removed.
Top right—thickened air-sac with anterior part removed.
Lower—viscera with scattered tuberculous nodules.

A slide stained by the Zeihl-Neelsen technique showed many acid-alcohol fast bacilli in the affected parts. From a study of these slides it is apparent that as a blood-bourne infection, the disease reaches the central artery of each lobule and that caseation develops from this point peripherally, ultimately destroying the whole lobule. A culture was set up on Finlayson's medium and growth of a typical avian strain appeared in three weeks. Unfortunately owing to a technical error on our part, Dr. A. McDiarmid, of the Agricultural Research Station at Compton, was subsequently unable to type the strain.

Discussion. This is the first confirmed case in a wild Pochard and only the fourth confirmed case in a wild duck in Britain. These others were a Wigeon, *Anas penelope* Linnaeus, from Orkney[1], a Shelduck, *Tadorna tadorna* (Linnaeus), from Kent[2], and a Wigeon from Abberton[3], while a further Wigeon from the same place was almost certainly tuberculous, but the culture was lost. General Wainwright, in recording the second Wigeon states that he believes tuberculosis will be found to be not uncommon in wildfowl in the wild state and the occurrence of yet another case from Abberton lends support to his views. In America, Quartrup and Shillinger[4] have recorded the disease in two American Redheads, *Aythya americana* (Vieillot).

The pathological features presented by this Pochard are rather unusual in the marked involovement of the air-sacs and pericardium, with great distension by fluid. The route of infection would appear to have been by the alimentary tract, which is the most usual in birds. Skeletal tuberculosis is rare and the involvement of a rib by direct spread was similar to a case recorded in a Sparrow-Hawk, *Accipiter nisus* (Linnaeus)[5].

We have now examined fifteen cases of tuberculosis in wild birds and of these, three had been found with gross lacerations and tooth marks, undoubtedly caused by some mammal predator. The first of these was a Short-eared Owl, *Asio flammens* (*Pontoppidan*), from Cambridgeshire[6], the second was the Kentish Shelduck and this Pochard is the third. The predator had made no attempt to eat any part of the owl; the Shelduck had had its head torn off and the Pochard had been badly wounded, but left alive. It would seem that these birds in their weakened state fall an easy prey, but that the predator is able in some way to detect that the victim is unpleasant and discards it. We have noticed that there is a faint but distinctive smell from such birds and we think that scent is the most likely way in which the predator is protected from eating something which might prove dangerous to it.

We are most grateful to Mr. J. Heather, Dr. K. Randall and Dr. A. McDiarmid for their help with this case.

References:—

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Haemorrhage from an Oesophageal Diverticulum causing death in a wild Mallard

by Dr. Jeffery G. Harrison and Mr. Peter Olney

Received 19th October, 1959

On 25th August, 1959, a freshly dead immature drake Mallard, *Anas platyrhynchos platyrhynchos* Linnaeus was found on the Kent Sand and Ballast Water wildfowl reserve at Sevenoaks. It was in good condition, but had free blood in its mouth. Post mortem examination showed that there was rather over an ounce of free blood in the oesophagus and on dissection an oesophageal diverticulum was found at the level of the bifurcation of the trachea. The diverticulum was full of food, being about the size of a walnut and had become firmly adherent to the root of the lung by inflammatory adhesions. There was a marked apex to the diverticulum in the area of attachment and there is no doubt that it was a traction diverticulum, being slowly enlarged with each movement of respiration as the adhesions tugged on the apex.

When the food contents of the diverticulum were removed for analysis, an ulcerated area of the lining was immediately apparent, in which a blood vessel had become eroded, resulting in a fatal haemorrhage.

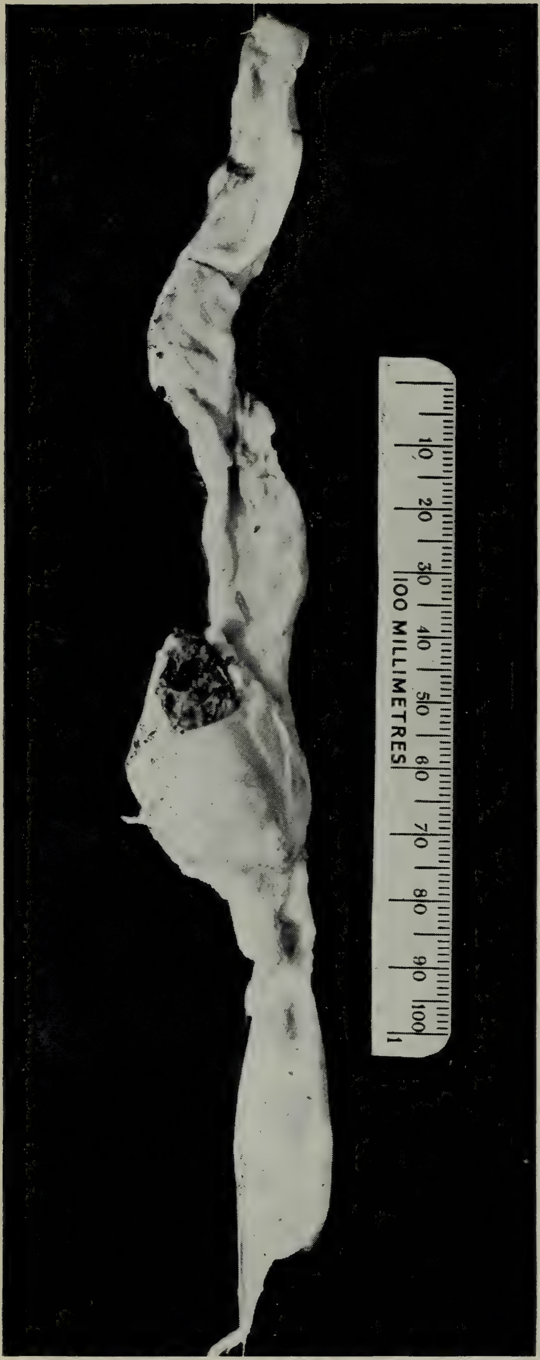
Diverticulum Contents

Species	*Number*	*Volume*	*% age of Volume*
PLANT MATERIAL			
Lolium multiflorum Lam. (Italian Ryegrass)	seeds 371	1.3 ml.	59.1%
Lolium perenne L. (Perennial Ryegrass)	seeds 57	0.3 ml	13.6%
Bromus sterilis L. (Barren Brome Grass)	seeds 10	0.2 ml	9.1%
Holcus lanatus L (Yorkshire Fog)	seeds 12	0.1 ml	4.6%
Juncus inflexus L. (Hard Rush)	capsule & seeds 22	trace	
Equisetum arvense L (Common Horsetail)	Stem and sheath	trace	
ANIMAL MATERIAL			
Hydropsychidae larvae (Caddis-fly)	3	0.3 ml	13.6%

Gizzard Contents

PLANT MATERIAL			
Polygonum amphibium L (Amphibious Bistort)	seeds c.90	0.4 ml	80%
Rumex conglomeratus Murr. (Clustered Dock)	seeds c.43	0.1 ml	20%

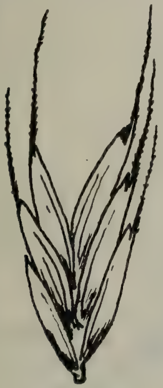
The contents of the diverticulum were completely different from those of the gizzard, indicating that the bird had been feeding in two separate habitats, and that once the diverticulum was full any further food ingested would pass normally into the gizzard. The state of the seeds in the gizzard would suggest that this meal had been taken only a short time before the bird succumbed. It is in the food contents of the diverticulum that the clue to the fatal haemorrhage is found. The spikelets of both the *Lolium* species are hard and sharply pointed, as are the narrower and longer seeds of *Bromus sterilis*. As the diverticulum and its contents are moved with each respiration, the consequent friction could easily result in these seeds causing the ulceration and haemorrhage. In this case the seeds of the *Bromus* and *Lolium* species must have been the direct cause of the bird's death.



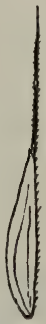
Oesophagus after removal, showing Diverticulum partly opened and full of food.

It is interesting to note that this is the first time that the spikelets of either *Lolium* species have been found in any bird sent in to the Wildfowl Trust for food examination. Seeds of *Lolium perenne* L. have been found in duck gizzards before but not still as part of the spikelet. This particular Mallard could scarcely have taken a more unfortunate meal.

We are most grateful to Dr. C. E. Hubbard for help in identifying the grass seeds.



Bromus sterilis seed. Nat. size.



Lolium multiflorum spikelet x 3.

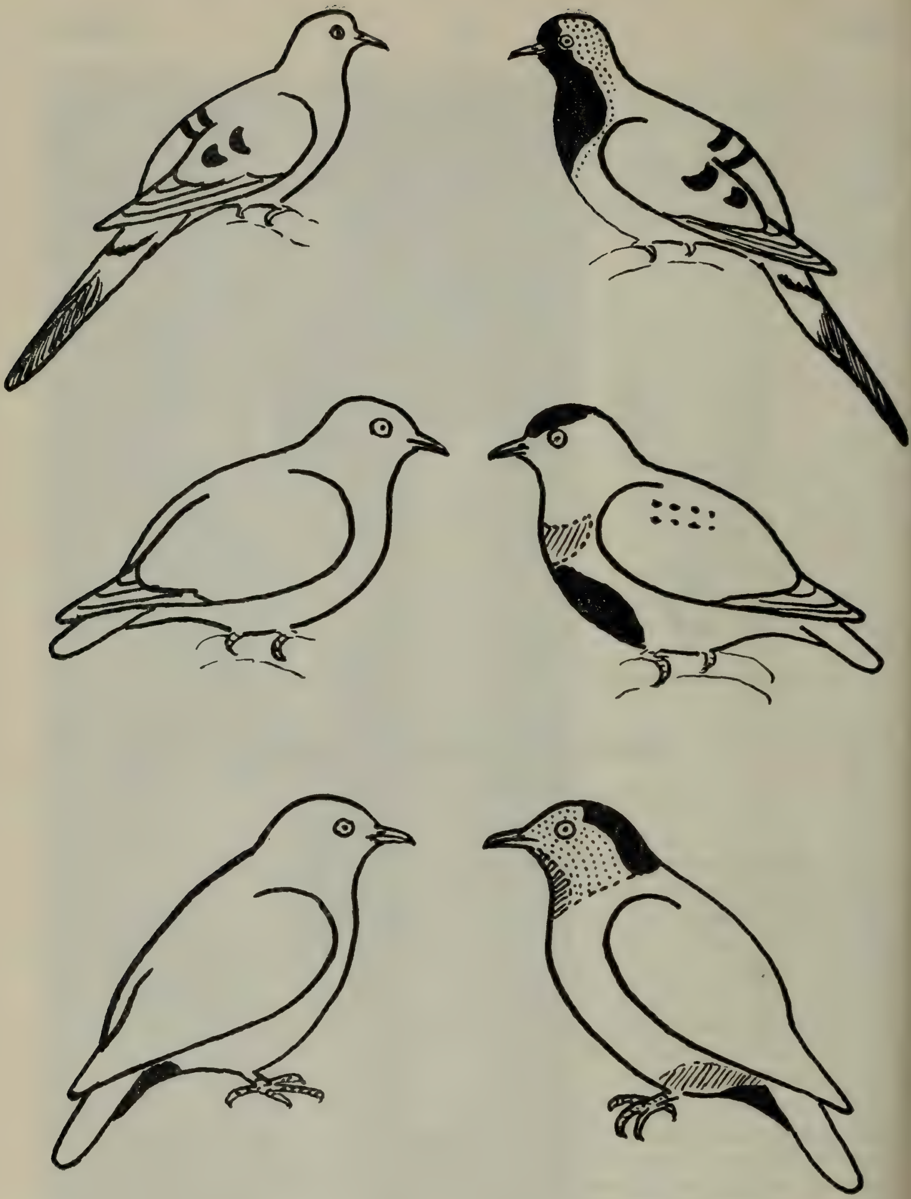
Sexual dimorphism in Pigeons

by Mr. Derek Goodwin

Received 17th October, 1959

The evolutionary and taxonomic significance of sexual dimorphism in birds has recently been the subject of an important paper by Sibley (1954). He remarks on the ''reduction or absence of sexual dimorphism in monogamous species in which the males participate in brood care'' owing to sexual selection being less intense and the effects of predation on either sex equally important in these species. It is certainly true that in nearly all cases where the male is much larger than the female or is adorned with modified feathers that reduce the efficiency of flight (except for display purposes) the hen alone incubates and rears the young. But in the matter of coloration there are some species with extreme sexual dimorphism in which both sexes share in brood care. This might seem incompatible with the opinion that marked sexual differences must have been brought about by sexual selection and/or the effects of predation on the female being more serious. I think, however, that detailed field studies of such species would show that one or both of these factors are involved and that such birds do not, in fact, constitute exceptions to the rule.

In this connection it is interesting to consider a large group like the Columbidae, comprising numerous genera and species, and among which there are varying degrees of sexual dimorphism. In all species of pigeons that have been observed, both sexes incubate and brood for about the same number of *daylight* hours and both feed the young. This is true even in such very sexually dimorphic species as, for example, the Masked Dove



EXAMPLES OF SEXUAL DIMORPHISM

from top

MASKED DOVE *Oena capensis* ♂ has red bill, black mask bordered pale grey and grey head; ♀ has these areas brownish. Both sexes have signal markings on wings and rump.

CHARMING FRUIT DOVE *Ptilinopus revoli bellus* ♂ has magenta cap, and belly patch, white and yellow breast patch, obscure blue spots on wing coverts.

BLACK-NAPED FRUIT DOVE *P. melanospila* ♂ has silver head, yellow throat, black nape, golden ventral regions and red under tail-coverts. ♀ is entirely green except for red under tail-coverts.

Oena capensis (McLachlan and Liversidge 1956), the Passenger Pigeon *Ectopistes migratorius* (Schorger 1955) and the Blue Ground Dove *Claravis pretiosa* (Skutch 1959). It is highly unlikely that there are any pigeons which are not monogamous and in which the male does not take an equal part in parental behaviour.

In a few species of pigeons the sexes are alike in colour, in many the females are a little duller than the males, but scarcely merit being described as sexually dimorphic. Generally their greys are a little browner and less bluish than those of males, their browns less reddish and more olivaceous; iridescent display plumage on their necks or wings less brilliant and less sharply defined, and their red, pink or yellow orbital skin less bright. In others differences between the sexes are more emphatic and some show striking and ovbious colour differences. In the accompanying tables I have listed all the species that show very striking sexual differences in colour. The division between species included and those rejected is, of necessity, based on rather arbitrary and subjective criteria. I have not, for example, included those species of *Treron* and *Ptilinopus* in which the under tail coverts are differently coloured but equally conspicuous in both sexes unless they show other marked differences of colour elsewhere.

As will be seen the main trends in the sexually dimorphic species are as follows: Firstly, conspicuous markings or patches of colour on the head, neck or breast of the male are absent or obsolescent in the female. This is so in several species of *Ptilinopus*, in *Treron vernans* and *T. bicincta*, in *Columba delagorguei*, in *Gallicolumba jobiensis*, *G. hoedti* and *G. xanthoura*, in *Ectopistes migratorius*, in *Oena capensis*, *Tutur tympanistria*, *Histriophaps histrionica*, *Phaps elegans* and *P. chalcoptera*, *Chalcophaps stephani* and some forms of *C. indica*. Secondly, there may be large areas of plumage quite differently coloured in the two sexes. This is the case in *Ptilinopus victor* and *P. luteovirens*, whose males are, respectively, brilliant orange and golden-green and females dark green; in several *Treron* species in which the males have the wing coverts and mantle dark purple, these areas being green like the rest of the plumage in the females; in *Geotrygon montana* in which the male is purplish-chestnut and the female olive-brown and in the three species of *Claravis* in which the males are blue-grey and the females brown. These two types of sexual dimorphism may be combined, as in *Ectopistes migratorius* where the male had a blue-grey head and upperparts and rufous-orange breast, these areas being brownish-grey and pale drab in the female. And in *Gallicolumba hoedti* where the male has a grey head, white breast and purple shoulders while the female is entirely brown. A different form of sexual dimorphism is found in some of the Cuckoo-doves, *Macropygia*, such as *M. mackinleyi*, where the male has a plain brown and the female a barred brown plumage, but neither sex is in any way brilliant or conspicuous.

Thus most sexually dimorphic pigeons differ in colour of head, neck or breast. These are parts of the body that are presented in all ''close-range'' hostile or sexual displays. The head itself is the focal point of all attacks and of most sexual advances (see Goodwin 1956 and 1956a). The use made of the bright patch on the lower breast or belly in many species of *Ptilinopus* appears to be unknown but a possible function may be inferred from the behaviour of other species. In many (probably in all)

SEXUAL DIMORPHISM IN THE MARKEDLY SEXUALLY DIMORPHIC PIGEONS
(OTHER THAN *Treron* and *Ptlinopus*)

	Buff, golden, black & white, or white on face or head	Black, white, blue-grey, orange or pink breast	Purple-chest-nut or blue-grey head & upper-parts	Dark grey head with white or bronze-gold hind-neck	Golden-brown head with glossy pink hind-neck	Signal markings on wings	Entire wing-coverts shining green	Iridescent areas on neck	Bright purple on wing-coverts
Columba delagorguei		♂		♂	♀			♂ & ♀	
„ iriditorques		♂		♂	♀			♂ & ♀	
„ speciosa			♂					♂ & ♀	
Gallicolumba jobiensis	♂ (♀)	♂							♂ & ♀
„ hoedti		♂							♂
„ xanthoura		♂							♂
Chalcophaps indica	♂ (some races only)	♂					♂ & ♀		
„ stephani	♂	♂					♂ & ♀		
Phaps chalcoptera	♂	♂				♂ & ♀			
„ elegans	♂	♂				♂ & ♀			
Histriophaps histrionica	♂ (♀)	♂				♂ & (♀)			
Turtur tympanistria	♂ (♀)	♂				♂ & ♀			
Claravis pretiosa			♂			♂ & ♀			
„ godefrida			♂			♂ & ♀			
„ mondetoura			♂			♂ & ♀			
Ectopistes migratorius		♂	♂			♂ & ♀		♂ & ♀	

Note: Brackets indicate that the enclosed has the character in question in a rather reduced form.

SEXUAL DIMORPHISM IN THE MARKEDLY SEXUALLY DIMORPHIC SPECIES OF *TRERON* and *PTLINOPUS*

	Black, blue, red, lilac or purple areas on head or nape	Bright patches on breast or belly	Upper parts largely purple, red, or chestnut	Head or breast grey or yellowish	Under tail-coverts red or chestnut	General plumage yellow, orange or golden-green	Signal markings on wings
Treron vernans		♂			♂ (♀)		♂ ♀
bicincta		♂			♂ (♀)		♂ ♀
curvirostra			♂		♂ (♀'s brightly barred)		♂ ♀
pompadora			♂				♂ ♀
sieboldi		(♂)	♂				
fulvicollis		♂	♂		♂		♂ ♀
olax			♂		♂ (♀)		♂ ♀
Ptilinopus jambu	♂ (♀)	♂			♂ (♀)		
superbus	♂* ♀*	♂	♂				
perousii	♂ ♀	♂	♂		♂	♂	
monachus	♂	♂		♂			
solomonensis	♂	♂					
rivoli	♂	♂					
formosa		♂					
nanus		♂					
victor						♂	
luteovirens						♂	
melanospila	♂			♂	♂ ♀		

* Heads of ♂ & ♀ *superbus* have quite different marking. ♂ has bright magenta cap, ♀ a dark blue nuchal patch.

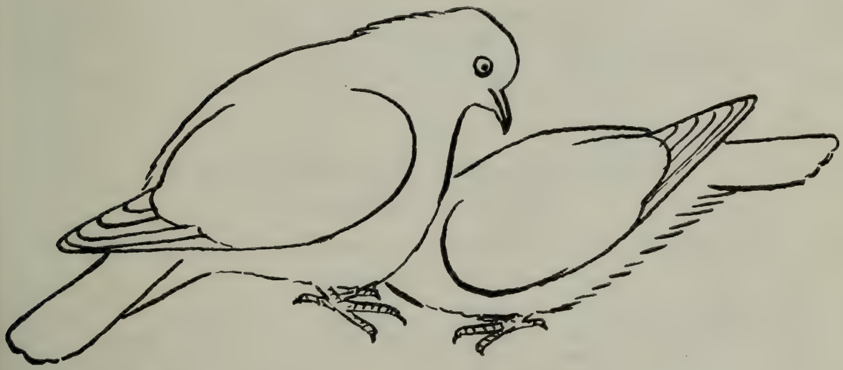
Note: Brackets indicate that the enclosed has the character in question only in reduced form.

species of *Columba* and *Streptopelia*, if, when the pair are together at the nest-site, either male or female shows a tendency to attack its mate the latter will react by lowering its head and pushing it under the aggressor's body. In this hiding of the head, which normally inhibits further attack, the head is pushed under the partner's body in the area that is marked with a bright patch in so many *Ptilnopus* species. It seems likely that in these fruit doves such aggression, and the need to inhibit it between paired or pairing birds, may be of more importance and hence have resulted in the evolution of a signal marking on the lower breast or belly. Brightly coloured under tail-coverts are also probably part of the display plumage used at "close range". They are certainly so used by *Treron vernans* which exhibits them by raising and lowering its tail while crouched on a potential nest site. The function of this, like that of the homologous display of the Lapwing *Vanellus vanellus*, is to attract the mate to the nest site.

Since such sexual dimorphism has evolved it must, presumably, confer some selective advantage in spite of monogamy and shared parental duties. Too little has been recorded of the ecology and behaviour of the species concerned to do more than suggest possible reasons why a much more marked degree of sexual dimorphism than is usual in pigeons might be of use to them. I feel that speculation is permissable in order to stimulate further interest and possible lines of study to any readers who are in a position to observe the species concerned. At least three of such forms; the Passenger Pigeon *Ectopistes migratorius*, the Masked Dove *Oena capensis* and the Flock Pigeon *Histriophaps histrionica* are nomadic or migratory in habits (Schorger 1955, Mackworth Praed and Grant 1952, Cayley 1931). In species in which a great many individuals invade and breed in a limited area that temporarily supplies an abundance of food there might well be more intense selection for any characters that would aid speedy and efficient pair formation than would otherwise obtain. An increased degree of sexual dimorphism and appropriately correlated responses to it would be one such character.

I think it possible, however, that, in some cases, predation might also have been instrumental in bringing about sexual dimorphism. Although in species where the male's bright markings are confined to his face and underparts it is unlikely that he would be much more conspicuous to a sight-hunting predator than would the female, at any rate when he is crouching in alarm on the nest, the case is very different in such forms as *Claravis* (all species) and *Ptilinopus victor*. Here it is impossible that both sexes should be *equally* inconspicuous or otherwise in any one environment and it is fairly certain that, in fact, the male must be much more easily seen than his mate. Now, if some predator that hunts by sight and attacks, say, *Claravis pretiosa*, when it is feeding, tends to hunt mostly during the middle hours of the day or, which is I think more likely, some nest-predator, who finds the nests of *Claravis* by spotting the sitting parent, is more active in the early morning and evening; either of these situations would result in greater selective pressure for concealing colouration on females than on males.

In view of what has been said of the importance of the head and the extent to which it and regions adjacent to it exhibit sexual dimorphism it may seem anomalous that there are a few species in which, although large areas of the plumage differ in colour in the two sexes, their heads are alike. The most extreme examples of this are *Ptilinopus victor* and *P. luteovirens*, where the orange or golden-green males and the dark green females both have heads of almost the same shade of olive-yellow. Large areas of plumage differently coloured in the two sexes would, however, function to permit sexual recognition at a distance just as differently marked heads or breasts would serve the same purpose at close quarters. There would, obviously, be less likelihood of selection for the two different forms of sexual dimorphism in a single species.



A pigeon hiding head under mate's body in response to aggression from the mate. This behaviour is shown by many species of *Columba & Streptopelia* and by *Geogelin Cureatu;* probably in other genera also.

As will be seen from the table, even in species in which there is considerable sexual dimorphism, signal markings on the wings and iridescent areas on the neck are, if present at all, found in both sexes. The explanation of this is, probably, that such markings are either not exhibited in threatening displays but only in such as are purely attractive or appeasing in function (as the wing-lifting display with which *Columba livia* exhibits its black wing bars) or, if they are exhibited in displays which have some hostile content (such as the bowing display does in many species) the ''behavioural dimorphism'' is such that the female does not give these displays in sexual situations but only in hostile encounters with other females. In this connection it must be emphasised that pigeons in which the sexes are similar show sexual differences in voice and behaviour when in breeding condition. It would be of interest to know whether such differences tend to be greater or less in the strongly sexually dimorphic species.

Whether sexual dimorphism in pigeons has come about mainly by the males developing bright plumage or conspicuous markings or the females losing them, is impossible to say. I think, however, that the latter process has probably played a greater part. Certainly this seems more likely because such sexually dimorphic forms are in a minority, and because of the greater apparent ease with which bright colours and complex colour-patterns are lost or obscured than acquired in pigeons. (Cain 1954, Goodwin 1959.)

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The River-Warbler *Locustella fluviatilis* (Wolf) in Nyasaland

by THE REV. R. CHARLES LONG AND MR. C. W. BENSON

Received 12th October, 1959

The African collector employed by one of us (R. C. L.), Mr. Suzi Dai, obtained a male specimen of *Locustella fluviatilis* on 30th January, 1959 on Mwanambere Hill, some ten miles west-south-west of Port Herald, southern Nyasaland, at 2,800 feet above sea-level, in short grass in *Brachystegia* woodland. The specimen has been submitted to the British Museum, and Mr. J. D. Macdonald has kindly confirmed the identification. It will be presented to the National Museum, Bulawayo.

This is certainly the first record of this species from Nyasaland. McLachlan & Liversidge, 'Bds. S. Afr.', 1957, p. 317, give a very few records from the South African region, while Mackworth Praed & Grant 'Bds. E. & N.E.Afr.' 2, 1955. p. 362, record it merely as a rare visitor to Kenya Colony. Chapin, 'Bds. Belg. Congo' 3, 1953, p. 463, gives no records from that area at all.

- 3 MAR 1960

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30th March, Joint Meeting with B.O.U., 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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The five hundred and eightieth meeting of the Club will be held jointly with the B.O.U. on 30th March, 1960.

Lead Poisoning in Wildfowl

by Mr. P. J. S. Olney

Part Two

Frequency

The incidence of lead shot can be determined either by actually examining the dead bird (usually as a by-product of a food investigation) or by fluoroscoping live-trapped or dead birds. But the absence of lead shot is not a sure indication that the bird is not suffering or has not suffered from the effects of lead poisoning. Jordan (Bellrose 1959) found in controlled experiments with captive Mallard that 21 per cent. of 119 birds dosed with a single No. 6 pellet had *no* pellets in their gizzard at the time of death. Of 1153 Mallard picked up either dead or dying from lead poisoning between 1938 and 1955 in six American states, 132 (11.4 per cent.) had no lead pellets in their gizzards (Bellrose 1959).

The actual time which a pellet has been in the gizzard can often be roughly ascertained by the amount of abrasion and erosion that has taken place over the surface. By using an aspirator (Nord, 1941) to recover pellets from a live duck which has been dosed with shot, it is possible to observe the effects of the digestive processes and grit movements. Signs of erosion are evident within 12 hours. The ridges and craters commonly formed on the pellets when discharged are smoothed, the surface is pitted and in places a silvery grey cast appears.

Bellrose (1959) provides a comprehensive table showing the incidence of lead shot found in gizzards of various Anatidae in America during the autumn and early winter months of 1938–1953. Parts of this are reproduced below in order to show species comparable to those found in this country.

TABLE 1. INCIDENCE OF LEAD SHOT IN N. AMERICAN SPECIES 1938–53.
(after Bellrose, 1959, p. 260)

Species	*No. of gizzards examined*	*1 pellet*		*Over 1 pellet*		*Total*	
		No.	*%*	*No.*	*%*	*No.*	*%*
Mallard *Anas p. platyrhynchos*	17,066	757	4·44	402	2·35	1,159	6·79
Gadwall *Anas strepera*	1,141	14	1·23	7	0·61	21	1·84
Baldpate *Anas americana*	1,577	42	2·66	8	0·51	50	3·17
Pintail *Anas a. acuta*	4,530	241	5·32	161	3·55	402	8·87
Green-winged Teal *Anas crecca carolinensis*	2,272	23	1·01	8	0·35	31	1·36
Shoveler *Anas clypeata*	1,439	19	1·32	4	0·28	23	1·60
Redhead *Aythya americana*	597	56	9·38	25	4·19	81	13·57
Lesser Scaup *Aythya affinis*	886	67	7·56	49	5·53	116	13·09
Canada Goose *Branta c. canadensis*	511	4	0·78	0	0	4	0·78

Since 1957 the Wildfowl Trust has been examining viscera and their food contents. The table below summarises the numbers and species which were found to contain lead pellets.

TABLE 2. INCIDENCE OF LEAD SHOT IN BRITISH SPECIES 1957–59.

Species	*No. of gizzards examined*	*1 pellet*		*Over 1 pellet*		*Total*	
		No.	*%*	*No.*	*%*	*No.*	*%*
Mallard *Anas p. platyrhynchos*	244	14	c.6	2	c.1	16	c.7
Wigeon *Anas penelope*	288	4	c.1	0	0	4	c.1
Teal *Anas c. crecca*	277	0	0	0	0	0	0
Shoveler *Anas clypeata*	14	1	c.7	0	0	1	c.7

Though only three species have so far been found to contain pellets, this is probably due to the smallness of the available sample. Mallard, though they may do considerable feeding in grainfields at certain times of the year, spend much time feeding in marshes and open stretches of water, often heavily shot over. Their habit of deep-puddling into the bottom soil in pursuit of seeds probably brings them into contact with deposited lead shot more frequently than any other dabbling species. The proportion of gizzards from Mallard which contain pellets is remarkably similar for British and American birds—6.56% and 6.79% respectively. It is significant that of 277 Teal viscera examined in this country *none* contained lead shot, although overall their diet is similar to the Mallard. Field observations suggest that Teal only dabble in the top one or two inches of mud in search of food, and they may therefore be missing the critical depths where lead pellets are lodged. All of the sixteen Mallard found to contain pellets had been feeding inland or in a slightly brackish habitat, and none of the birds shot whilst *feeding* on saltmarsh species contained any pellets.

A large sample of diving ducks is needed before any figures comparable to American species are available. Possibly in certain areas diving ducks are particularly vulnerable to lead ingestion—at least the American figures indicate that is so.

A small number of birds sent in for post-mortem examination have been found to be suffering from lead poisoning. The most startling case being a first-year drake Mallard, hand-reared though not pinioned, which had 41 pellets in the gizzard, and not surprisingly showed the typical lead poisoning syndrome signs. In this case, it was thought that in the pit where the ducks were kept, there may have been some old cartridges from which the covering had rotted and exposed the lethal pellets.

Fertility and Fecundity

Apart from direct losses, some concern has been engendered by evidence in other animals that their reproductive capacities are impaired by lead poisoning (Cole & Bachhuber 1914—rabbit and fowl; Aub *et al.* 1926—man). Shillinger & Cottam (1937), Cheatum & Benson (1945) and Elder (1954) have voiced concern over possible sterility as an after effect of lead poisoning in wildfowl. However, Cheatum & Benson (1945) concluded that no significant loss of fertility resulted from the ingestion of lead shot in male Mallard. In a series of experiments by Elder (1954) to test the effects of lead poisoning on fertility and fecundity in Mallards, he administered 18 No. 6 shot to his experimental birds. Though he managed to show that fecundity was reduced, and fertility, embryonic success and hatchability were not, his results are somewhat nullified by his use of such a large dosage level. Rarely will 18 pellets be ingested by a duck, and seldom will significant numbers recover from the resultant severe poisoning.

Movement and Mortality Rates

Field experiments conducted by Bellrose (1959) in the years 1949–51 showed that birds dosed with lead shot had (1) a greater vulnerability to being shot, (2) a lower ability to migrate and (3) higher over-all mortality rates in the first year after being ringed and released. Wild Mallard that were dosed with one No. 6 shot each and then released were 1.5 times as vulnerable to shooting as were undosed controls; those dosed with two No. 6 pellets were 1.9 times as vulnerable and those dosed with four No. 6 pellets were 2.1 times as vulnerable. In the dosed Mallard the effects of the ingested shot did not appear to affect their behaviour until 5 days, when the proportion of ring returns became higher than for undosed birds. The period of affliction appeared to persist for about 15 days or slightly longer until the ringing returns reverted to more similar figures for both dosed and undosed birds. It is suggested that either the duck is shot or dies of lead poisoning in the second or third week following ingestion, or they begin to recover by the early part of the fourth week. The weakness and fatigue symptoms so apparent as part of the lead poisoning syndrome, are likely to reduce their movements. That it has a pronounced effect on their local movements has been shown experimentally by Jordan & Bellrose (1951) and Bellrose (1951, 1959). The more ingested lead pellets there are per bird, the greater is the reduction in the movements of those birds.

The variations in mortality rates with different sexes and ages were attributed primarily to differences in the quality and quantity of food consumed. It is known that the food intake of juvenile Mallard exceeds that of the adults, and it has been shown experimentally (Jordan & Bellrose 1951) that the juvenile Mallard mortality rate from lead poisoning is less than the adult rate. The female mortality was higher than comparable male mortality in all months apart from the spring months when the female is known to eat more than the drake. At all other seasons the female is thought to eat less than the male (Jordan & Bellrose 1951). Lower air temperatures which are known to increase food consumption may well have an effect on the mortality numbers.

Reduction of losses

In an effort to eliminate the losses due to lead poisoning among wildfowl various non-toxic shot alloys have been advocated and tested. Jordan & Bellrose (1950) reviewed previous work and tested a number of possible alloys. Several metals regarded as being non-toxic were considered as substitutes for lead. The availability, physical and chemical properties, price, and ballistic performance were factors which had to be taken into consideration. Green & Dowdall (1936) suggested that a lead-magnesium alloy shot would not cause lead poisoning. They suggested that the magnesium would be hydrolysed by water which would produce irregular cracks across the surface and the final disintegration of the pellet. Unfortunately their findings were not substantiated by Jordan & Bellrose's careful experiments. Three other lead-alloy shots tested, lead-phosphorus, lead-calcium and a copper-alloy coated lead shot, were not less toxic than the usual lead-alloy shot used. Attempts to coat lead shot with a nylon plastic in order to lessen the abrasion effects were unsuccessful (Bellrose 1959). However an iron-alloy was found to be non-toxic when dosed to penned wild Mallard, but it has the disadvantage of not being so effective a shot as a lead shot when fired at maximum ranges, because of its lower density (Bellrose 1953). Ignoring their availability and price, there are many metals which could probably make good or even better shot pellets than the lead-alloy now used. The physical properties of gold would suggest a good example—though its use as a shot would probably be confined to a favoured few.

As the effects of lead poisoning can be greatly minimised by the form of food consumed, one of the means of alleviating losses would be to encourage the growth of suitable leafy, aquatic plants. Though often freely given, corn is the least beneficial in reducing the poisoning effects.

It would probably be impertinent to suggest that less pellets would be available for ingestion if wildfowlers were more careful in their selection of shot ranges. Nevertheless, more careful shooting would undoubtedly reduce the chances of lead pellets being obtainable by feeding birds.

There are no records in this country comparable to the spectacular local outbreaks of lead poisoning recorded in the United States. It is probably more in the dispersed, day to day mortality that our losses occur. Such mortality can occur constantly, and generally will pass unnoticed, particularly if there is cover available for the sick birds to hide until death or predators overtakes them.

Bellrose (1959) has estimated that approximately one-fourth of the wild Mallards in North America in any year ingest lead shot, and that in the Mississippi Flyway approximately 4 per cent. of the Mallards die as the direct result of lead poisoning, with an additional 1 per cent. afflicted with lead poisoning being shot. For all wildfowl species in North America the annual loss due to lead poisoning is estimated to be between two and three per cent. of the population. These figures can only suggest what may be the extent of the problem in this country, and until we have more information no accurate assessment can be made. At the present time losses due to lead poisoning are probably small, but their possibility should certainly be taken into account in the dynamics of any wildfowl population.

Acknowledgements

It would be churlish of me to finish this paper without fully acknowledging the use of all the references mentioned in the text. I am, as must be so apparent, particularly indebted to the various papers of Bellrose & Jordan.

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Notes on Philippine Races of *Dryocopus javensis*

by Dr. Kenneth C. Parkes

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In connection with my studies of birds of the Philippines, I have had occasion to review the races from that archipelago of the widely-distributed Asian woodpecker *Dryocopus javensis*. There appears to be no completely satisfactory English name for this species. Most books I have consulted call it "Great Black Woodpecker", but this name can lead to confusion with *D. martius*. Delacour and Mayr (1946) use the name "White-bellied Black Woodpecker", which is unsuitable for the species as a whole as long as the black-bellied *hodgei* of the Andaman Islands is considered conspecific with *javensis* (Peters, 1948).

The present study is based primarily on the collections of the American Museum of Natural History, supplemented by certain additional material from the Chicago Natural History Museum, U.S. National Museum, and University of Michigan Museum of Zoology. I am indebted to Drs. D. Amadon, A. L. Rand, H. Friedmann, and R. W. Storer, for the use of their material.

In comparing *hargitti* of Palawan with *philippinensis* of Negros, etc., Delacour and Mayr (1946) credit the former with a "bigger bill". This character does not hold up in series, nor is there anything to Hachisuka's (1930) character of "more developed scarlet crest" of *hargitti*. Two characters given by Hachisuka (1934) do separate these races; namely, the richer reds in both sexes and broader moustachial stripe in males of *philippinensis*. In addition, the sides of the face and the throat are more heavily streaked with white and the white dorsal patch more extensive in *hargitti* than in *philippinensis*. Hachisuka (1934) mentions occasional "red tips" to chin, throat and nape feathers of *philippinensis*. A distinct red area is present on the throats of two out of three adult males from Negros, but is absent in a single adult male from Masbate; this variation is not mentioned by Delacour and Mayr.

The original description of *Thriponax philippinensis* Steere (1890) mentioned the islands of Guimaras and Masbate, and both of these islands are cited as type locality by Peters (1948). Hachisuka, (1934), however, lists a specimen from Masbate in the British Museum as the type, and Masbate may thus be considered the restricted type locality of *philippinensis*. A male from Masbate in the American Museum is notable for the great restriction of its white dorsal patch; when all feathers are in place and not disarranged, this patch is almost completely concealed. However, the amount of dorsal white is subject to great individual as well as geographic variation in this species. McGregor (1909) describes Masbate specimens as having a ''wide band of light buff across the lower back'', and this description fits a pair of Masbate specimens in the U. S. National Museum. Leyte, Samar, and Bohol birds are supposed to belong to the black-rumped group of this species, but some individuals from these islands have the bases of the rump feathers white.

Incidentally, as Dr. Rand has pointed out to me (*in litt.*), the buff colour of the rump and underparts in this species is due largely to staining, newly-grown feathers being nearly pure white.

The distinguishing character given by Delacour and Mayr (1946) to separate *mindorensis* from *philippinensis*, ''much more white on the throat and sides of the head'', is valid only on the average, and a female from Mindoro in the American Museum could not be distinguished from *philippinensis* on this basis alone. However, the more slender bill ascribed to *mindorensis* by Hachisuka (1930) is a valid character. Although in the latter paper Hachisuka deprecated bill colour as a subspecific criterion in this species, he later (1934), and I think rightly, admitted that the entirely black bill of *mindorensis* contrasted with the pale lower mandible of *philippinensis*. This character had been pointed out long before by Stresemann (1913).

Delacour and Mayr's description of *multilunatus* of Mindanao and Basilan as having ''very little white on the back'' is misleading. In only a single Basilan specimen examined is any white at all visible; in most specimens these feathers are not even white at the base. The whitish buff borders of the breast feathers, mentioned by Delacour and Mayr, disappear with wear; this would account for the statement by Stresemann (1913) that *multilunatus* has such pale markings ''in der Regel—nicht immer''. There is no difference between Mindanao and Basilan specimens.

All descriptions I have seen of the race *suluënsis* differentiate it from *multilunatus* solely on the basis of its smaller size. However, all of the eight adult specimens of *suluënsis* examined (5 American Museum, 3 Carnegie Museum) have a concealed white rump patch formed by the bases of the feathers, and have scarcely any pale edges to the black breast feathers, even in fresh plumage.

The race *pectoralis* is currently assigned a range including the islands of Samar, Leyte, Bohol, and Panaon. I have seen no specimens from the latter island, but comparison of a series of Samar and Bohol birds with a single one from Leyte, and examination of a coloured figure of the types of *pectoralis* from the latter island (Hargitt, 1890) indicate that two subspecies are involved. The unnamed race may be known as:

Dryocopus javensis samarensis, subsp. nov.

Type: adult ♂, American Museum of Natural History no. 648725, Matuginao, Samar, Philippine Islands; collected 18th April, 1957, by D. S. Rabor (collector's no. 14909).

Diagnosis: similar to *D. j. pectoralis* of Leyte, but black markings of chest much more extensive, with narrower pale edges; black streaking of throat much heavier; lores black, not whitish; auriculars with more black, less white and red feathers. None of the specimens of *samarensis* examined has any red in the throat; the single Leyte male in the American Museum has a well-marked red patch in the centre of the throat, but this is undoubtedly subject to individual variation as in the race *philippinensis*, and such a patch is apparently absent in the types of *pectoralis* (Hargitt, 1890).

Range: specimens of *samarensis* have been examined from Samar (9), Calicoan (1), and Bohol (5). Although Leyte lies between Samar and Bohol, there is no difference between birds from the latter two islands, and both are clearly distinct from Leyte birds. The small island of Panaon is barely separated from Leyte, and is probably inhabited by true *pectoralis*.

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Aspects of Relationship between Palaearctic and Ethiopian Wagtails

by MR. MICHAEL P. STUART IRWIN

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The relationship of two of the three species of Ethiopian Wagtails as geographical representatives of widespread Palaearctic forms has been realised for a considerable period. *Motacilla aguimp* was first associated with *Motacilla alba* by Kleinschmidt (1933: 1–3) and the two groups have subsequently been treated as conspecific by Hartert and Steinbacher (1933: 151); Meinertzhagen (1951: 450); Dementiev and Gladkov (1954: 597); Vaurie (1959: 87); and Voous (1959: 36). Likewise the African *Motacilla clara* and the Malagasy *Motacilla flaviventris* have been similarly associated with *M. cinerea;* again the first step in this direction was taken by Kleinschmidt (1931: 1–10) and followed by Hartert and Steinbacher (*loc. cit:* 148); Meinertzhagen (*loc. cit.* 450); Dementiev and Gladkov (*loc. cit.*); and Voous (*lov. cit:* 36), (though this last author does not specifically mention *M. flaviventris*).

Generally, these ideas have not been very widely accepted, nor formally incorporated in the leading faunal works published over the period under review. Nevertheless the relationships would appear to be very real, but the degree of individual divergence involved, requires independent treatment in each case. *M. aguimp* is undoubtedly best allied to *M. alba* as the similarities are great. With the *M. cinerea—clara—flaviventris* group, the degree of differentiation reached is such that it emphasises specific distinctness, on a morphological basis, but ecologically *cinerea* and *clara* remain true to their very similar habitat preferences and are extremely alike in behaviour, (Moreau 1949: 183–191); though *flaviventris*, the only Malagasy form, occupies a wider ecological niche, (Rand 1936: 475); but this is not unexpected as it has no competitors in its island home. The relative differences however, in the species must in part reflect the period of time that has passed since the original colonisations were made.

Yet a third example within the genus has generally gone unrecognised, in the instance of the rather cryptic, but none the less obvious relationship of the populations of *Motacilla capensis* in South, Central and East Africa to the Holarctic *Motacilla flava* complex. None of the more recent reviews or discussions such as Smith (1950: 100–113); Grant and Mackworth-Praed (1952: 255–270); Meinertzhagen (1954: 145–149); Williamson (1955: 382–403); Mayr (1956: 115–119); Vaurie (1957: 1–8); or Vaurie (1959: 75) have suggested that the *M. flava* complex had any tropical representatives outside of the Palaearctic region; though Kleinschmidt (1931: 1–6) seems to have implied this possibility, yet all the evidence points to *M. capensis* being of Palaearctic derivation.

Superficially the brightly coloured and diverse *M. flava* complex seem quite distinct from the rather drab *M. capensis* and its races, so much so that their relationship is further masked psycologically by the retention of the genus *Budytes* of Cuvier, which is still rather widely used in standard works to accommodate the yellow *flava* Wagtails. This complicated group of forms are all predominantly yellow to a greater or lesser degree and always have yellow underparts; but basically there are many similarities. The morphological plasticity and apparent genetical instability within the *flava* complex is great, as is reflected by the problems raised in their classification. It is not therefore, unnatural, that this diversity should have to be further broadened to include an isolated group of tropical forms.

M. capensis as a basically modified tropical off-shoot of the *flava* complex, has, as with *M. clara*, undergone a general reduction in yellow pigmentation, but has by no means lost it entirely. It also retains, with increased emphasis in the adult state, (though the degree of this varies racially), the black chest circlet present in all juveniles of *flava* races. The yellow pigmentation persisting in the *capensis* section is most marked in fresh-plumaged birds, but tends to fade as wear proceeds. Winterbottom (1959: 96–98), in his revision of *M. capensis*, stresses that the amount of yellow in the underparts is an exceedingly variable character, and from a series of 131 specimens examined was able to pick out thirteen that were especially yellow below. The pattern of white in the outer rectrices, present to a greater or lesser degree in all members of the genus and generally diagnostic, is closely similar in the *flava* and *capensis* groups. In the former the inner webs of the two outermost pairs of tail feathers are generally dusky along their margins for about one half to two thirds of their length and in the former, dusky equally along about four fifths of their length. In both, the dusky border broadens and joins the rachis towards the feather bases.

As with the *M. cinerea—clara* and *M. alba—aguimp* groups, (allowing for local ecological considerations and interspecific competition), there is a very close correlation in the habitat choice between the Palaearctic and Ethiopian representatives. The habitat of *M. capensis* is rather restricted, but apparently wider in the southern-most part of its range in the western Cape Province, where interspecific competition disappears, as no other *Motacilla* species is of regular occurrence, (McLachlan and Liversidge, 1957: 368–370).

Capensis requires chiefly areas of short grass or exposed mud adjacent to water, open edges of swamp etc. and has locally, (as has the *M. alba—aguimp* group), become adapted to the vicinity of human habitations and lawns. Its habitat preference is, therefore, largely the African equivalent of the water meadow, marsh and streambank type of niche occupied by *flava* in Europe and Asia.

The question may then logically be asked, that if the three endemic African Wagtails, (and the Malagasy *M. flaviventris*) are geologically speaking of relatively recent derivation and the probable outcome of Pleistocene colonisations, were the ecological niches that are now occupied vacant at the time of their arrival, or did the gradual infiltration of breeding populations of Palaearctic origin, eliminate an already established and older endemic group of the genus. Zoogeographically the genus *Motacilla* is at present almost wholly Old World in distribution and most characteristically Palaearctic. Its only occurrence in the New World, is in western Alaska, where *M. f. tschutschensis* breeds, (but winters in south-east Asia). *M. a. ocularis* straggles as a vagrant to Alaska and the Aleutians, and once to Baja California. Both evidently represent spill-overs, probably recent, from the Old World. The virtual absence of the genus, otherwise, from north America seems rather surprising, considering the rather wide eco-tolerance and universality of its habitat. This absence suggests that Africa need not have had any endemic representatives, prior to the great climatic fluctuations of the Pleistocene. On the other hand, this would be hard to reconcile with the fact that Wagtails of the genus *Motacilla*, osteologically at least generically inseparable from modern forms, are still currently accepted as recognisable as early as the Oligocene of Europe; (Howard 1950: 17), though no recent critical studies appear to have been made on these fossils. However, many colonisations with subsequent dispersal, radiation and extinction, could have taken place over this enormous period of time.

To summarise, *M. alba* and *M. aguimp* races are regarded as conspecific; *M. cinerea*, and *M. clara* races and *M. flaviventris* as a superspecies; likewise *M. capensis* races are grouped with the *M. flava* complex to form another superspecies.

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The Breeding Biology of the Goldeneye

by Captain Collingwood Ingram

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Writing of the Goldeneye, *Bucephala c. clangula*, in his "Birds of the British Isles" (Vol. VII p. 133) David Bannerman remarks "Common though this duck is in Europe no observer claims to have witnessed the departure of the brood from the nest." This would seem to indicate that, apart from the fact that the species commonly breeds in an abandoned nesting hole of a Great Black Woodpecker, *Picus martius*, or in some hollow tree, comparatively little is known in this country of the bird's breeding biology. It may, therefore, be of interest to draw attention to a paper by Mika Sirén giving the results of five years intensive study of the nesting habits of this species in south-central Finland. This paper, published in 1952, appeared in a bulletin of the Evo Game Research Station (*Riistatieteellisia Julkaisuja. Papers on Game Research No.* 8. *Helsinki* (1952)). Although written in Finnish, happily Sirén has appended a fairly comprehensive summary of its contents in English.

From this summary we learn that before a number of artificial nesting sites were placed in suitable localities in the forested area occupied by the Evo Research Station no Goldeneyes bred there. The design of the boxes so placed was roughly based on the dimensions of a typical example of a Great Black Woodpecker's nesting hole. By 1951 eleven out of the hundred boxes installed at Evo were tenanted by Goldeneyes and since then, I understand, more have been occupied by them.

It was the advent of these newcomers that enabled Sirén to make his exhaustive study of this duck's nesting habits. To ensure accuracy several ingenious devices were resorted to. For instance he placed a self-recording electric apparatus in a number of boxes to register the incubation rhythms: he differentiated the young of the broods under observation by injecting dyes into the eggs before hatching, while, lastly, he rendered the relevant adults recognisable by the employment of plastic tags or aluminium wing-marks.

Sirén's investigations show that after hatching from one to one-and-a-half days will always elapse before the young ducklings attempt to leave the nest. He noticed that this event invariably took place in the morning and only after the female had made several reconnaissance flights in the direction she intended to lead them. This done she would settle on the ground or water nearby and start uttering a "special sound never registered on other occasions". In response to this call the ducklings would immediately start leaping from the nest, following one another with astonishing rapidity. The average time taken for the whole brood—it should be remembered that a Goldeneye normally lays from ten to twelve eggs—to evacuate the five nesting boxes that Sirén had under observation, was only 94 seconds—convincing proof of a very remarkable uniformity in the ages and vigour of the young birds.

Having watched all her progeny jump from the nesting box, the female Goldeneye would then gather them together and soon after lead them off in the direction of some predetermined destination. The route selected would be either overland through the forest or across the waters of a lake.

On one occasion a brood of eight ducklings survived a cross-country journey of nearly a mile (1,500 metres) but the following year only one out of five survived the same journey. The average speed at which they travelled on land through the forest was about half-a-mile an hour; on water they progressed, of course, very much faster and one brood swam a distance of about a mile-and-a-third (2,140 metres) in just over an hour. When one recollects that these journeys were accomplished by recently hatched ducklings that have had no chance of feeding their power of endurance seems almost incredible.

A new race of the Sunbird *Anthreptes collaris* from eastern Southern Rhodesia

by MR. MICHAEL P. STUART IRWIN

Received, 5th January, 1960

In the Check List of the Birds of Southern Rhodesia, Smithers *et al.*, 1957 in a footnote on page 145, drew attention to certain rather distinctive specimens of *Anthreptes collaris* obtained in the lower Pungwe River area and at the junction of the Lusitu and Haroni Rivers at the southern end of the Chimanimani Mountains. At the time, lack of adequate comparative material prevented any conclusions being reached as to the racial status of these birds, but the subsequent acquisition of a more adequate series shows clearly, that the population of the seaward montane slope of the eastern highlands of Southern Rhodesia, are clearly distinguishable from all neighbouring populations; these being *A. c. zuluensis* of the adjacent lowlands of Portuguese East Africa and the Sabi and Limpopo River drainages, and *A. c. zambesiana* of the Zambesi River drainage northwards.

It is proposed to name this new form

Anthreptes collaris patersoni subsp. nov.

Type: ♂ adult. Lower Pungwe River, Holdenby, eastern Southern Rhodesia. Altitude 2,200ft. gonads enlarged. Collected by R. H. N. Smithers, 25th December, 1957. In the collection of the National Museum of Southern Rhodesia, Bulawayo. National Museum registration No. 33737.

Description: Differs from *A. c. zuluensis* (Roberts) 1931, and *A. c. zambesiana* (Shelley) 1880, by having the sides of the breast and flanks strongly washed with olivacious green, the yellow of the abdomen being confined to the centre. Compared with *A. c. zambesiana* the yellow of the abdomen is clearer, less deep in tone and likewise distinguishable from *A. c. zuluensis* which has the abdomen a paler lemon yellow. In the breadth of the purple chest circlet below the metallic green throat it is intermediate between *A. c. zuluensis* and *A. c. zambesiana* but there is some individual variation in this respect. In the colouration of the flanks and abdomen the new race thus very closely resembles nominate *A. c. collaris*, from which it is not always distinguishable, but whereas the nominate form has the wing coverts broadly edged with metallic green, the new race, like the closely related *A. c. zuluensis* and *A. c. zambesiana*, has the coverts only very narrowly edged with metallic green, but in all these three races there is considerable individual variation and it is not always possible to separate specimens on this character alone. Also, unlike the races to the north, the nominate one has the metallic purple chest circlet strongly shot with blue. The metallic green of the throat and mantle does not vary in any of the four races.

The female is like *A. c. zuluensis*, which has the throat pale olivacious yellow and readily distinguishable from *A. c. zambesiana* in which the throat is a clearer greenish yellow.

Paratypical material: 26 adult ♂♂, 11 adult ♀♀.

Measurements of the type: Wing (flattened) 52, Culmen (to base of skull) 16, Tail 34, Tarsus 16 mm.

Wing measurements of the paratypical series: ♂♂ 50–56 mm. (av. 52.7); ♀♀ 47–51 mm. (av. 49.7).

Range: Apparently restricted to sub montane, lowland evergreen, and fringing riparian forest on the seaward slope of the eastern border mountains of Southern Rhodesia and neighbouring Portuguese East Africa, but so far only known from the lower Pungwe River area of Inyanga, in the valleys of the Ruda, Honde, Mtarazi and Pungwe Rivers; and the Haroni and Lusitu Rivers at the southern end of the Chinamimani Mountains. These two areas have an exceptionally high rainfall varying in the region of between 80–150 or more inches per annum. Though this new form is only known from Southern Rhodesian territory, it must be of general distribution on the seaward slopes of the mountains in adjacent Portuguese territory. In the rain shadow area of the Sabi Valley and in the region of Mount Selinda, it is replaced by *A. c. zuluensis*. Except as a wanderer it does not normally occur above 4,000ft. and is generally commonest between 2,000–3,000ft. On the rain shadow side of the mountains, the general lack of continuous forest cover and the fact that the true montane forests are above its normal altitudinal zonal range precludes its occurrence on the westward slopes. There would appear, however, to be no physical barrier between *A. c. patersoni* and the population of *A. c. zuluensis* living in the adjacent lowlands of Portuguese East Africa, even the population on Gorongoza mountain are nearest to *A. c. zuluensis* in the colouration of the underparts, but here intergradation with *A. c. zambesiana* begins to take place as pointed out by White *Bull. B.O.C.* 70, 1950; 40–43, in his revision of the species.

Remarks: This new form, which is essentially a heavily saturated race from a region of high rainfall, has gone unrecognised due to its rather limited distribution in an area that has only recently been explored ornithologically, but is locally very abundant.

I have named this new race after Miss Mary Paterson, (now Mrs.

B. Ball), formerly Zoological Assistant at the National Museum and an indefatigable collector of zoological material.

In the preparation of this description I have to acknowledge with thanks the loan of comparative material from P. A. Clancey, Director of the Durban Museum and Art Gallery; in the course of which, in conjunction with that in the National Museum, I have examined over 140 specimens from South, Central and East Africa representative of the following races which I consider recognisable: the nominate, *zuluensis*, *zambesiana*, *elachior*, *jubaensis*, *garguensis* and *ugandae*, as well as the race here formally described.

An unusual case of Predation by *Aquila verreauxi*

by CAPTAIN CHARLES R. S. PITMAN

Received 16th October, 1959

Mr. A. B. Daneel has sent me from South Africa the account —given him by a reliable eye witness—of a strange occurrence in Bechuanaland, in December 1958. A pair of Black Eagles, *Aquila verreauxi* and a number of Cape Vultures, *Gyps coprotheres* shared the nesting ledges provided by an isolated cliff with some Lanners, *Falco biarmicus* and Black Storks, *Ciconia nigra*. One of the Black Eagles was observed to stoop repeatedly at a Vulture sitting on a ledge until it was forced to take off. The Eagle then stooped at the Vulture in mid-air, striking it and sending it spinning to the ground. On inspection it was found to have claw marks at the base of the neck and was quite dead. It was not the nesting season for either species. There were many carcases of Vultures lying around, and prior to witnessing this unprovoked attack it had been surmised that the mortality was due to disease or some unusual factor. But subsequently it was believed that the Eagles might have been mainly responsible.

A New Race of Red-billed Quelea from South-Eastern Africa

by MR. P. A. CLANCEY

Received 19th January, 1960

A series of eighteen Red-billed Queleas *Quelea quelea* (Linneaus) from Bergville, Natal, stands apart as appreciably darker and colder in colour on the upper-parts, wings and tails than our sample of undoubted *Q.q. lathamii* (A. Smith), 1836: country near to and beyond Kurrichane, i.e., Zeerust, western Transvaal. The difference is sufficiently marked as to warrant the recognition of the East Griqualand, Natal and eastern Orange Free State populations of *Q.quelea* as a new race, which may be known as

Quelea quelea spoliator, subsp. nov.

Type: ♂, adult. Winter dress. Near Bergville, Natal. 8th November, 1959. Collected by Mr. J. Muller. In the collection of the Durban Museum.

Diagnosis: Similar to *Q.q.lathamii* in fresh non-breeding dress, but distinguishable by the distinctly darker colour of the head-top and nape (about Deep Mouse Gray (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. li), as against Light Grayish Olive (pl. xlvi)); mantle and rump darker, the pale edges to the feathers duller than the

Pinkish Buff (pl. xxix) of *Q.q.lathamii*. Wings and tail darker. Not markedly different ventrally, though inclined to be more strongly washed with grey on the sides of the breast, body and flanks. Similar in size.

Material: Q.q.spoliator, 20 (18 *Paratypes*). *Q.q.lathamii*, 20 (western and eastern Transvaal, Southern Rhodesia and Damaraland, South-West Africa).

Measurements of the Type: Wing (flattened), 69, culmen (exposed) 18.5, tarsus 19, tail 37 mm.

Range: The south-eastern sector of the species' South African range. Breeds along the base of the Drakensberg escarpment in East Griqualand (Ongeluks Nek, Matatiele district, etc.) and Natal (Bergville), and in adjacent districts of the Orange Free State (Bethlehem). A single specimen from Kendal, near Witbank, Transvaal highveld (16th July, 1956), is more like *Q.q.spoliator* than *Q.q.lathamii*.

Remarks: The name chosen for the new taxon is from the Latin *spoliator*, a robber, plunderer, which is descriptive of its extremely destructive proclivities in agricultural districts. As is well known, the African *Quelea quelea* has virtually usurped the position formerly held by the migratory locust as the chief pest of African agriculture.

Q.q.lathamii is mainly a race of the interior and western savannas of sub-continental South Africa, but its precise breeding range is not clear, as the populations seem to be given to quite considerable movement in the non-breeding season, birds ringed near Pretoria, in the Transvaal, being recovered as far afield as Nyasaland. Examples ringed near Bulawayo have been taken at Monze, Kafue River, Northern Rhodesia (*vide* Benson and White, *Check List of the Birds of Northern Rhodesia*, 1957, p. 124), while Benson, *Check List of the Birds of Nyasaland*, 1953, p. 76, considered *Q.q.lathamii* "mainly a non-breeding visitor from South Africa or Southern Rhodesia" to Nyasaland, where it is regular. It is not known if *Q.q.spoliator* moves about to the same extent, though the indications are that it does not.

In the paratypical series of *Q.q.spoliator*, all collected on 8th November, 1959, some of the males have started to assume the breeding dress over the head.

Notes on some African warblers

PART TWO

by MR. C. M. N. WHITE

Received 6th November, 1959

(1) *Bradypterus lopezi* (Alexander).

Although this bird has always been treated as a species, it would appear to be no more than a subspecies of the *B. barratti*, closely allied to *camerunensis* Alexander. *B. lopezi* has always been understood to consist of the nominate form on Fernando Po, and a much lighter and redder form, *barakae*, on Ruwenzori and adjacent mountains. Examination of *lopezi* shows that it can quite properly be associated with *camerunensis* from which it is obviously derived, differing in its lighter and brighter reddish upperside and light reddish wash on throat and belly. *B. barakae* is more distinct, since apart from its light colour, it has narrower webbing to the tail feathers. This difference is also said to be characteristic of *lopezi*, but in specimens examined is not very obvious when compared with *camerunensis*. Both *lopezi* and *barakae* have 10 tail feathers like *barratti*. To sum up, *lopezi* is so obviously an insular derivative of *camerunensis* that there can be no doubt about its being a race of *barratti*; *barakae* is more distinct, but unless it is treated as a distinct species, it must also be included in *barratti*, which is the course I adopt.

(2) *Phylloscopus ruficapilla* (Sundevall) and allies.

The resident African *Phylloscopi* (sometimes placed in *Seicercus*) are usually placed under a number of species; yet with the possible exception of *budongoensis*, a bird of lowland forest, and not examined, the remainder could easily be considered to form a superspecies comprising several groups of races, and linked by forms bridging transitions between the more distinct. They are:—

ruficapilla group from Cape Province to Angola, Katanga, Tanganyika and Taita hills in Kenya: all with yellow throats and grey bellies; the head top is reddish brown or olive brown except in *laurae* in which it is green like the back. All have the back grey or green.

laetus green backed like last, including a green crown; underside however more or less like the *umbrovirens* group except that on Mount Kabobo the breast and flanks are greyish as in the *ruficapilla* group.

umbrovirens group: this group stands rather distinctly apart in its brown back and rufous and white underside, but is quite clearly linked to *ruficapilla* by *laetus*.

herberti group: with green back, black crown and rufous tinged throat.

umbrovirens overlaps *laetus* in range except on mt. Kabobo, but is largely separated by altitude replacing *laetus* over 9,000 feet. Similarly *umbrovirens* overlaps *ruficapilla* at Uluguru, again with an altitudinal difference, but less marked, and both occurring occasionally together. For this reason *umbrovirens* must be kept as a distinct species, although there is so little overlap in range. I propose to retain *laetus* and *herberti* as full species in view of their distinctness, but *laurae* is so much more like *ruficapilla* that I include it in the same species. In any case all the forms are certainly members of a single superspecies.

(3) *Racial variation in the African Phylloscopi.*

ruficapilla variation is mainly clinal from *voelckeri* to *ruficapilla* with *ochrogularis* and *laurae* isolated. *P. r. quelimanensis* is very poorly differentiated and more material from Namuli will probably result in uniting it with *johnstoni*.

umbrovirens: the supposed characters of *omoensis* are not well born out by the British Museum series. The green wash on the upperside depends on freshness of plumage and is not geographical; the whiter abdomen of southern birds is less constant than supposed. I cannot accept *omoensis* as distinct. Birds from Waghar and Durass in British Somaliland are identical, but *williamsi* Clancey seems quite distinct and must be restricted to the Erigavo area.

In East Africa the differences between *mackenzianus* and *dorcadichrous* seem inconstant, and although southern birds average darker than northern, I cannot see enough constant difference to uphold *dorcadichrous*. On Uluguru *fuggles-couchmani* is very like *umbrovirens*, only differing in its darker green edging to the wing feathers, and slightly stouter bill.

BRITISH ORNITI

INCOME AND EXPENDITURE ACCOU

1958 £	EXPENDITURE	£	s.	d.	£	s.	d.
	"Bulletin" Vol. 79						
419	Cost of publication, distribution, including Editor's Expenses	439	8	5			
83	*Less:* Sales	118	13	5	320	15	0
336							
36	Notices etc. for Meetings				42	8	7
33	Postages, Projectionist & Miscellaneous Expenditure				59	16	7
5	Audit Fee				5	5	0
5	Contribution "Zoological Record"				5	5	0
415					433	10	2
—	Balance, Excess of Income over Expenditure, carried down				43	11	3
£415					£477	1	5
45	Excess of Expenditure over Income, brought down				—	—	—
35	Surplus for the year carried to General Fund ...				78	15	4
£80					£78	15	4

BALANCE SHEET

		£	s.	d.	£	s.	d.
1274	GENERAL FUND:						
	As at 31st December, 1958	1274	5	0			
	Add: Surplus for the year	78	15	4	1353	0	4
103	BULLETIN FUND:						
	As at 31st December, 1958	102	15	3			
	Received during year	5	0	0	107	15	3
68	SUBSCRIPTIONS 1960 paid in advance				82	5	8
24	SUNDRY CREDITORS				45	17	0
1469					1588	18	3
	TRUST FUND: (The Capital of this Fund may not be used. The income from it is General Revenue.)						
1000	F. J. F. Barrington Legacy				1000	0	0
	C. R. S. PITMAN, *Chairman* C. N. WALTER, *Hon. Treasurer*						
£2469					£2588	18	3

We have examined the above Balance Sheet and Income and Expendit
accordance therewith, and in our opinion correct.

FINSBURY CIRCUS HOUSE,
BLOMFIELD STREET, LONDON, E.C.2.
20th February, 1960.

LOGISTS' CLUB

R THE YEAR ENDED 31st DECEMBER 1959

1958 £	INCOME	£	s.	d.	£	s.	d.
	SUBSCRIPTIONS:						
245	240 Members	252	0	0			
—	1 Member Arrears	1	1	0			
10	9 Associates	9	9	0			
—	Income Tax recovered under Deeds of Covenant 1956/57, 1957/58, 1958/59	96	17	6	359	7	6
255							
	ENTRANCE FEES:						
11	17 Members	17	0	0			
1	— Associates	—	—	—	17	0	0
103	INVESTMENT INCOME:						
	General Fund	51	14	3			
	Trust Fund	48	19	8	100	13	11
370					477	1	5
45	Balance, Excess of Expenditure over Income, carried down				—	—	—
£415					£477	1	5
—	Excess of Income over Expenditure, brought down				43	11	3
80	Sales of "Bulletin" for previous years	40	8	1			
	Less: "Bulletins" purchased and expenses ...	5	4	0	35	4	1
£80					£78	15	4

31st DECEMBER, 1959

1958 £		£	s.	d.	£	s.	d.
	GENERAL FUND, INVESTMENTS:						
	4½% Defence Bonds, at cost	1000	0	0			
	3% Savings Bonds 1960/70, at cost	100	0	0			
		1100	0	0			
	Less: Reserve	20	0	0			
1080	(Market Value £1083)				1080	0	0
1	PROJECTOR, LANTERN & SCREEN—Nominal Value ...				1	0	0
1	STOCK OF "BULLETIN"—Nominal Value				1	0	0
9	DEBTORS				19	5	0
378	CASH AT BANK				487	13	3
1469					1588	18	3
	TRUST FUND, INVESTMENTS:						
1000	3½% War Stock £1,399 11*s.* 0*d.* ... ... (Market Value £917)				1000	0	0
£2469					£2588	18	3

c unt with the books and records of the Club and certify them to be in

W. B. KEEN & Co.,
Chartered Accountants.

British Ornithologists' Club

REPORT OF THE COMMITTEE

MEETINGS

The Club held nine meetings during the year, including a joint meeting with the British Ornithologists' Union on the occasion of the Centenary of the Union when a banquet was held at the Fishmongers' Hall, London, attended by over two hundred members of the Union, the Club and their guests. This increased the total attendance at these meetings to over 522 for the year.

MEMBERSHIP

The Committee very much regret to record the death during 1959 of Mrs. M. J. C. Alston, A. W. Boyd, M.C., Dr. Karl Jordan, Dr. R. T. Moore, Mrs. A. H. Murton, G. H. Swynnerton and A. C. Trott.

There were ten resignations and twenty new members were elected, bringing the total membership to 247, an increase on the year of three. The number of subscribers to the ''Bulletin'' has been maintained despite the raising of the subscription from one guinea to thirty shillings.

FINANCE

The Accounts of the Club for the year 1959 are submitted herewith. The result on Income Account is an excess of income of £43 11*s*. 3*d*. compared with a deficit in the previous year of £45. The amount recovered in respect of Income Tax on Deeds of Covenant, now that our claims have been re-admitted, was £96 17*s*. 6*d*., and there was an increase in the amount received from Subscribers to the ''Bulletin'' of £35 consequent upon the raising of the subscription to £1 10*s*. 0*d*. On the other hand the cost of the ''Bulletin'' is £20 more because the full List of Members, and the Rules, were republished; and also there were unavoidable increases in some of the other expenses. Sales of old ''Bulletins'' produced a net figure of £35 4*s*. 1*d*. which, added to the excess of Income, made up a surplus for the year of £78 15*s*. 4*d*.

A further donation of £5 was made to the ''Bulletin Fund'' which is much appreciated.

The same satisfactory results are not expected for the year 1960. The tax repayments on the Deeds of Covenant will be for one year only (against three in 1959) and there will also be an increase of 5% in printing charges. It is anticipated the Club is likely to come out all square on the year.

C. R. S. Pitman,
Chairman.

Notices

BACK NUMBERS OF THE "BULLETIN"

Back numbers of the "Bulletin" can be obtained at 3/– each. Applications should be made to R. A. H. Coombes, Esq., Zoological Museum, Tring, Herts. No reply will be sent if parts are not available.

Members who have back numbers of the "Bulletin" which they no longer require, are requested to kindly send them to R. A. H. Coombes, Esq., as above.

DINNERS AND MEETINGS FOR 1960

19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

FREE COPIES

Contributors who desire free copies of the "Bulletin" containing their notes should state so on their MS., otherwise these will not be ordered. These will be supplied up to a maximum of fifty.

PUBLICATION OF THE "BULLETIN"

Members who make a contribution at a Meeting should hand the MS. to the Editor at that Meeting. It is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any), and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

BLACK AND WHITE ILLUSTRATIONS

The Club will pay for a reasonable number of black and white blocks at the discretion of the Editor. If the contributor wishes to have the blocks to keep for his own use afterwards, the Club will not charge for them, as has been done in the past.

Communications are not restricted to members of the British Ornithologists' Club, and contributions particularly on taxonomy and related subjects will be considered from all who care to send them to The Editor, Dr. J. G. Harrison, "Merriewood", St. Botolph's Road, Sevenoaks, Kent.

Communications relating to other matters should be addressed to the Hon. Secretary, N. J. P. Wadley, Esq., 14 Elm Place, London, S.W.7.

SUBSCRIPTION

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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

MAY 1960
PURCHASED

Edited by
Dr. JEFFERY HARRISON

Volume 80
No. 5

May
1960

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

- 5 MAY 1960
PURCHASED

Volume 80
Number 5
Published: 2nd May, 1960

Annual General Meeting

The Sixty-eighth Annual General Meeting of the British Ornithologists' Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7. at 5.30 p.m. on Tuesday, 19th April, 1960. Captain C. R. S. Pitman took the Chair and there were eleven Members present.

(1) The minutes of the last Annual General Meeting held on the 21st April, 1959, were passed and signed.

(2) The Report for the year to the 31st December, 1959, having been circulated, its adoption was proposed by Dr. J. M. Harrison, seconded by Miss T. Clay and passed unanimously.

(3) The Accounts for the year to the 31st December, 1959 having been circulated, the Chairman asked Mr. C. N. Walter to comment. The Hon. Treasurer stated that the Inland Revenue authorities had now allowed the tax claim under Deeds of Covenant for the last three years. In future he estimated that this privilege would result in a repayment of between £40–£50 a year. He went on to explain that despite the increase in the subscription to the Bulletin from 21/– to 30/–, there had been no falling-off in the number of subscribers. The printers had advised him that printing costs would rise by about 5% in 1960.

(4) The Committee recommended that the following amendment to the Rules be added to Clause 10:—

> "Communications are not restricted to members and contributions, particularly on systematics and related subjects, will be considered for publication."

Mr. Walter had pointed out that the phrase "the third paragraph on page xix" given in the Agenda would be ambiguous if a new printing of the Rules was made, whereas the substitution of "Clause 10" for this phrase would remove any ambiguity.

The amendment to the Rules was proposed by Miss T. Clay, seconded by Mr. N. J. P. Wadley and passed unanimously.

(5) *Election of Officers:* The Committee's recommendation, proposed by Mrs. E. C. Barnes and seconded by Dr. J. G. Harrison, was passed unanimously as follows:—

"that (*a*) Mrs. P. V. Upton be elected to the Committee vice Miss T. Clay who retires by rotation;

(*b*) Mr. C. N. Walter be re-elected Hon. Treasurer;
(*c*) Mrs. B. P. Hall be elected temporarily, and in addition to being Vice-Chairman, Hon. Secretary vice Mr. N. J. P. Wadley.''

Captain Pitman stated that Mr. C. N. Walter had expressed a wish to retire after ten years' service but, in the circumstances, he had agreed to continue in office for another year, an action which was much appreciated.

The Chairman then went on to express his thanks to Mr. Wadley pointing out that the Club owed him a tremendous debt of gratitude for all his work over the past ten years and proposed a vote of thanks which was heartily seconded by Mr. C. N. Walter and carried with acclaimation.

(6) A vote of thanks to the Auditors, Messrs. W. B. Keen & Co., proposed by Mr. C. N. Walter and seconded by Miss T. Clay, was passed unanimously.

(7) The Chairman proposed a vote of thanks, seconded by Mrs. J. D. Bradley, to the outgoing members of the Committee.

(8) The Chairman explained that proposals had been made for closer working between the Union and the Club. He said that the Union was contemplating holding its Annual General Meeting outside London. The Union would then propose to have only one meeting in London which would be the scientific meeting and asked that the Club should consider whether it might be possible for members to attend one meeting of the Club per annum without joining the Club.

It had also been suggested that consideration might be given to suspending the entrance fee for an exploratory period of one or two years, a suggestion with which the Hon. Treasurer of the Club was in complete agreement.

The Committee were examining the possibility of doing away with Associate Membership as the Union felt it was unsatisfactory to have admission to the Club independent of admission to the Union. The Chairman stated that the Union was considering what help could be given to the Club over secretarial work, publicity and encouragement to members to join the Club. He added that these discussions had been on a most friendly and co-operative basis and he felt confident that considerable advantages to both organisations would result.

The dinner and monthly meeting was then held.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 21; guests, 6; guest of the Club, Mr. P. P. G. Bateson; total, 28.

The Chairman welcomed Mr. C. J. Uys of the S.A.O.S.

Spitsbergen and the Ivory Gull

An account of a talk and film given to the Club on 19*th April*

by MR. P. P. G. BATESON

The film was taken by R. E. Hitchcock on a Cambridge expedition to north-east Spitsbergen in 1958. Our object in visiting this remote and barren part of the arctic was to study the breeding biology and behaviour of the Ivory Gull. The only really accessible colonies had been reported about 30 years previously from a certain Wahlenbergfjord which opens on to the west side of the large island of Nordaustlandet.

We arrived in Wahlenbergfjord on board a Norwegian research vessel at the end of June. Unfortunately as the fjord was still choked with ice we were put ashore on a small island in the mouth of the fjord. The wealth of bird life, however, was remarkable for an island nearly on the 80th parallel. It was not long before we discovered that this abnormally high concentration of birds was also appreciated by some Arctic foxes that had got stranded on the island.

Whenever ice and weather conditions permitted we searched the cliffs of the fjord for possible Ivory Gull colonies. After three weeks we found a colony of about 35 pairs at the top of a thousand foot cliff. The only means of watching the gulls was from the top of the cliff so we had to set up camp on the plateau above.

Our efforts were well rewarded as the Ivory Gull proved to be an extremely interesting as well as beautiful bird. Cliff-nesting in this species appears to be a comparatively new habit. There are scarcely any adaptations in the breeding behaviour to cliff-nesting as there are in the Kittiwake. Nevertheless the Ivory Gulls' behaviour is interesting. Head-tossing, which in most gulls is only performed in courtship and as a food-begging movement by the juveniles is also performed by the Ivory as appeasement after a hostile clash. Not all the other postures can be readily homologised with those in other gulls which indicates that the Ivory Gull is taxonomically distinct.

Since most eggs hatched around the end of July and beginning of August we were only able to measure the incubation period for one egg which was laid the day after our arrival at the colony; the period was 24 to 25 days. A clutch size of two eggs is most common; however there are indications that this may vary from year to year according to the amount of food available.

At the beginning of August we left our colony for a few days in order to explore the head of the fjord where another colony had been reported. This colony was deserted, however. There seems to be little doubt that the Ivory Gull is decreasing in numbers. This is probably because the ice caps are gradually receding so that the Ivories are being exposed to increased competition from other gulls and increased predation from the Arctic fox.

We left Wahlenbergfjord in the middle of August just before the ice closed in again.

Details of our results on the breeding biology of the Ivory Gull can be found in *British Birds* 52: 105–114 and on the breeding behaviour in *Ardea* 47: 157–176.

Some Notes on the Breeding of the Desert Bullfinch (*Rhodospiza* Sharp 1888) in Israel

by Mr. H. Hovel

Received 10th February, 1960

The interesting Desert Bullfinch, *Rhodospiza obosleta* Sharp, seems to have occurred rather sporadically in the past. Hartert[1] gives Palastine (Israel and Jordan of today) and Syria as the westerly boundary of its distribution. Aharoni[2] described it 35 years ago as breeding in the Dead Sea depression and along the Euphrates, also arriving "in winter in tens of thousands and filling almost every orchard and grove around Jaffa . . ."

Bodenheimer[3] confirmed it as an irregular winter visitor only and it would seem that invasions have ceased for at least the past 15–20 years. In the Natural History Department of Tel-Aviv University I have seen some mounted specimens which had been purchased in invasion years from Arabs, who caught them in winter for cage birds.

In April 1958, I was fortunate to find a very isolated colony of this species breeding about 15 kilometres north-west of Beersheba, Israel. The colony was nesting in acacia bushes beside the road and extended over about a mile. Beyond this the bushes held no nests, although conditions were exactly the same.

The nests were situated mostly at a height of 1.5–2.0 metres above ground level, but I also found two nests in the tops of young eucalyptus trees, 3.5–4.0 metres high. The colony consisted of about 100–150 nests and the birds were surprisingly tame, the sitting females waiting almost to arm's length before slipping away. The eggs, 5–7 in number were pale greenish-white with small red dots and blotches. Both the birds and the eggs corresponded in size to the Greenfinch, *Chloris chloris*. The males remained mostly near the nest site during incubation, singing in a very peculiar, soft, melodious tone.

This colony seemingly succeeded in raising young and in August I saw small flocks of young in the vicinity. In the winter they disappeared, but in the spring of 1959 they were back, breeding in exactly the same area. The nest was chiefly lined with cotton and it is of interest that cotton plantations are a recent agricultural development here, existing only for the past two or three years, but gradually extending.

So far, this is the only confirmed breeding colony found in the country. This interesting record is all the more remarkable since the species was not even known as a winter visitor to the country during the past 15 years.

I am most grateful to Dr. James M. Harrison for his help with the manuscript.

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[2] J. Aharoni. "*Torat hecha'y*" (in Hebrew), Vol. I, p. 166. 1923.
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Notes on some Philippine Tailor-birds

by DR. KENNETH C. PARKES

Received 15th February, 1960

The taxonomy of the group of Philippine tailor-birds assigned by Delacour and Mayr (1946) to the species *Orthotomus atrogularis* has not yet been fully worked out. Particularly intriguing is the status of the two Luzon forms, *derbianus* Moore and *chloronotus* Ogilvie-Grant. Delacour and Mayr list both as subspecies of *O. atrogularis*, but the line between the ranges of the two is not as simple as they indicate, and it is highly possible that the two forms may prove to be sympatric in parts of central Luzon.

Peters (1939: 110) believed this group of tailor-birds to be closely allied to, and possibly conspecific with, *O. sericeus*, but omitted any mention of *O. atrogularis* in his discussion of relationships. I agree with Delacour and Mayr that this group of subspecies is better placed with *atrogularis*. Nominate *atrogularis* has a green tail, while in *sericeus* and its races the tail is brown. It is true that some of the Philippine races have brown tails like *sericeus*, but these intergrade with green-tailed races. Sexual dimorphism is strongly developed in *O. a. atrogularis* and is absent in *O. sericeus;* it is poorly developed or absent in most of the Philippine forms, but is quite evident in the populations of certain of the central islands (see beyond).

The species *Orthotomus sericeus* does enter the Philippine avifauna, but only on Palawan and adjacent islands, Cagayan Sulu, and the Sulu Archipelago. Delacour and Mayr assign all of these islands to the subspecies *nuntius* Bangs, which was based on one specimen from Cagayan Sulu (the type), one from Jolo (=Sulu Island), and four from Sibutu. Comparison of 17 Palawan specimens with 6 from Borneo convinces me that Peters (*loc. cit.*) was correct in assigning the Palawan population to nominate *sericeus* rather than to *nuntius*. The chapter on warblers, including the tailor-birds, in Delacour and Mayr (1946) was initialled by Mayr; Delacour later (1947: 280) reverted to *sericeus* for the Palawan birds. I have seen only two adults and one juvenile from the Sulus, but *nuntius* strikes me as being a very weak race. Individual variation in *sericeus* encompasses all to the characters used by Bangs (1922: 82) in defining *nuntius*, and I believe the latter name is best placed in the synonymy of *sericeus*. All Philippine populations of *Orthotomus sericeus* would thus be referred to the nominate race.

The subspecies *Orthotomus atrogularis castaneiceps* Walden has long been assigned a range including the islands of Guimaras (type locality), Ticao, Masbate, Panay, and Negros. The only attempt to sub-divide this range was that of Steere (1890: 20), who described *panayensis* (as a full species, in line with the taxonomic concepts of his day) from Panay. Bourns and Worcester (1894: 59) rightly pointed out that Guimaras and Panay are so similar zoogeographically that it would be highly unlikely that one form would be found on Panay and another on Guimaras, Negros and Masbate. They quite properly relegated *panayensis* to the synonymy of *castaneiceps*. In refusing to admit any subdivision of *castaneiceps*, however, Bourns and Worcester were misled by what they believed to be simple individual variation in colour. They, as well as other authors who have worked with this group of tailor-birds, have overlooked the fact that these populations of *Orthotomus atrogularis* are sexually dimorphic, although less strikingly so than is the nominate race. Females are greyer, less green dorsally, and are less streaked on the throat than are males. When the sexes are segregated, it is immediately apparent that the variation mentioned by Bourns and Worcester is not only sexual but geographic as well, and the population of Negros is clearly distinct. It may be called

Orthotomus atrogularis heterolaemus, new subspecies.

Type: Chicago Natural History Museum no. 219508, adult ♂, collected at Lake Balinsasayo, Negros Island, Philippines, 13th December, 1953, by A. L. Rand (collector's no. 90).

Characters: sex for sex, more extensively grey (less green) dorsally than *O. a. castaneiceps*, and more heavily streaked on the throat. Males of *heterolaemus* are conspicuously streaked with dark grey and white on the throat and upper breast; at the opposite extreme are females of *castaneiceps*, in which the throat streaks are at best only faintly indicated.

Specimens examined: O. a. castaneiceps—Guimaras, 1; Panay, 2; Ticao, 2; Masbate, 1. *O. a. heterolaemus*—Negros, 16.

Acknowledgements: The specimens listed represent a composite series from the collections of Carnegie Museum, Chicago Natural History Museum, and American Museum of Natural History. I am indebted to the authorities of the latter two institutions for permission to use this material.

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Accidental Maiming of a Black-throated Diver

by Dr. James M. Harrison

Received 20th February, 1960

On 17th January 1960 an adult female Black-throated Diver, *Colymbus arcticus arcticus* Linnaeus was found on the Kent—Sussex boundary near Frant, Sussex.

The bird was maintained alive for some days and then died. It was noted at the time when it was found that it had a healed amputation of the left "foot" at the tibio-tarsal articulation. In previous communications the writer[1] and other authors, (Manson-Bahr[2], Sage[3], Pitman[4,5], Wainwright[6], and Harrison[7]) have called attention to the probability that this type of mutilation in both waders and duck could be the result of being trapped by clams which are common in many fresh water reservoirs as well as in lochs. This contention has indeed been more or less proved by the catching of a Teal with such a mollusc actually attached to one leg, as recorded by Wainwright[6].

In previous communications this has been referred to as "predation". In a sense this is true, although clams cannot be regarded as intentionally preying upon birds, and it is purely accidental that, actuated by tactile stimulation, the mollusc reacts by closing smartly upon any presenting part, thus trapping toes, tarsus or indeed anything that provokes the reflex. Once trapped such a clam will never let go for the simple reason that so long as any movement persists, however slight this may be, contraction and tonic closure will be maintained, and it is only when necrosis and sloughing occur and the trapped part separates, that trapper and trapped will part company.

The present instance must have occurred in adult life and since the last moult and moreover whilst the bird was resting at the edge of a loch or similar situation, for, in addition to the loss of the "foot" it had also lost a considerable part of the primaries of the left wing-tip, which must obviously have been folded in close apposition to the "foot" at the time of the accident.

It is not without interest also that there was virtually no wasting of the powerful musculature of the left lower extremity which one might reasonably have expected to find as a result of the lack of resistance, which would be presented to the abnormal limb.

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Herring Gulls in Wales with partially amputated legs

by MR. BRYAN L. SAGE

Received 6th February, 1960

Dr. Jeffery G. Harrison (*Bull. Brit. Orn. Cl.* 78: 150) records two adult Herring Gulls *Larus argentatus* Pontoppidan seen near St. David's Head, Pembrokeshire, in May, 1958, both of which had partially amputated legs.

On 17th September, 1959, at Whitesands Bay, near St. David's, among some 40 Herring Gulls standing near where I was sitting were no less than five individuals with injured legs. The injuries were as follows:—

(a) Adults
  1. two, each with one leg entirely missing below the tibio-tarsal joint.
  2. one with all the toes of one foot missing.

(b) Immatures
  1. one with the lower half of the tarsus of one leg missing.
  2. one with the tarsus of one leg amputated at the tibio-tarsal joint.

It would be of interest to know what agency is responsible for such a relatively high proportion of injured birds in this area.

An unusual foot-deformity in the Heron *Ardea cinerea cinerea* Linnaeus

by MR. BRYAN L. SAGE

Received 3rd November, 1959

On 28th March, 1959, Mr. Bernard Nau found a freshly dead Heron near the Broxbourne gravel pits, Hertfordshire. The bird was an adult and it exhibited an unusual deformity of one foot. Unfortunately the specimen was not collected.

The deformity was to be seen on the fourth digit of the left foot, the distal phalanx lacked the normal terminal claw and was succeeded, instead, by an additional growth of toe with a blunt end. To all outward appearances the toe therefore had an additional phalanx.

Notes on some Pintail x Teal Hybrids

by Mr. Bryan L. Sage

Received 19th January, 1960

On 17th November, 1959, I exhibited to the Club two examples of hybrids between the Pintail and the Green-winged Teal; the present communication deals with these specimens in detail.

In both cases these hybrids were shot in the wild and it is therefore impossible to say with any certainty which species was the male parent in these crosses, and the fact that the Pintail is placed first when referring to the hybrids is of no significance. Both the European and the American Green-winged Teal are involved in these crosses.

So far as the American Green-winged Teal is concerned I have been able to trace only one previous record of hybridization with the Pintail, this was listed by Sibley (1938) and was obtained in captivity in America. In the case of the European Green-winged Teal x Pintail or *vice versa* cross there are just over sixteen recorded instances most of which are mentioned by Gray (1958). In the majority of cases these refer to crosses in captivity, but in Meinertzhagen (1930) there is a fine coloured plate by Mr. George Lodge, of a male (by plumage) that was shot in the Egyptian Delta on 26th January, 1923.

The two examples that form the subject of this paper are described below:—

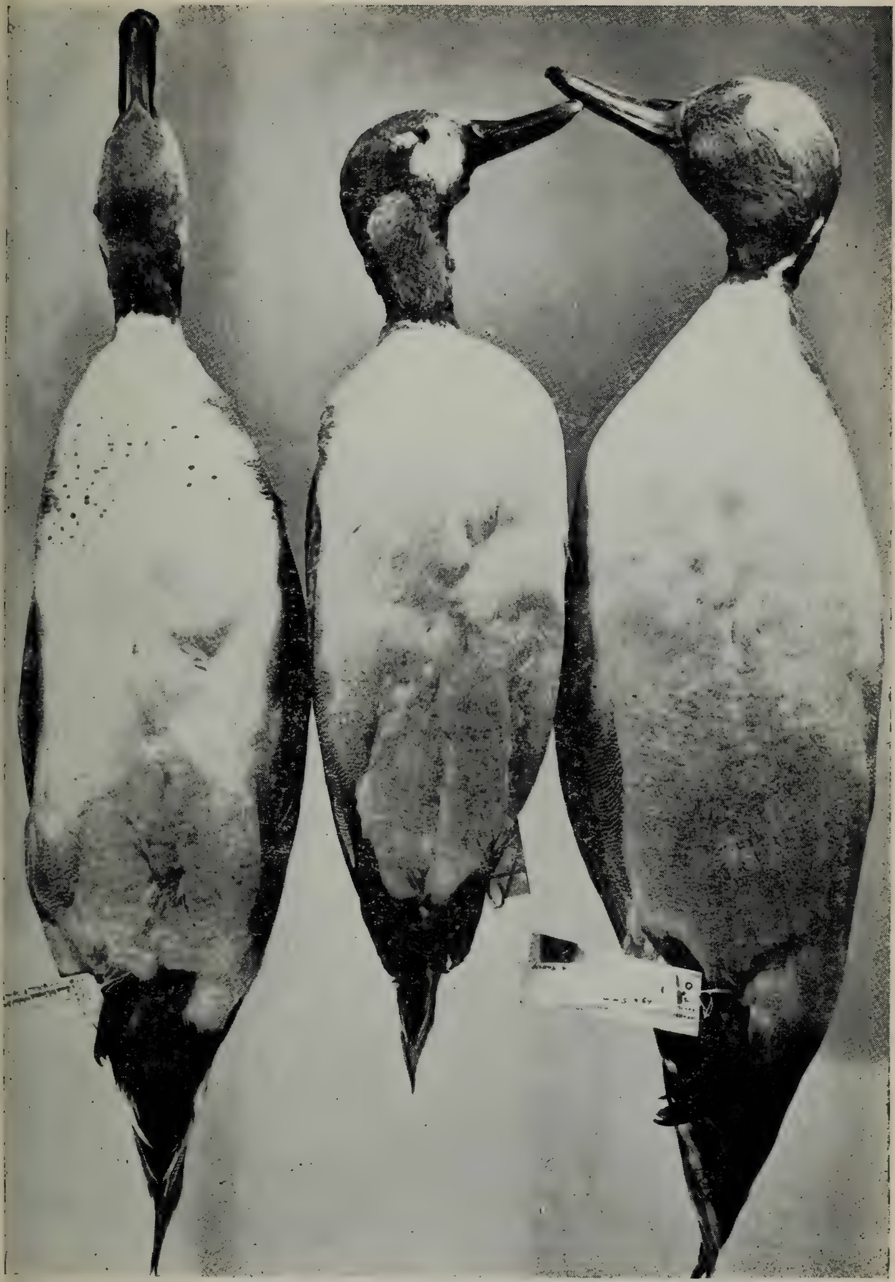
(1) *Anas acuta* L. x *Anas crecca crecca* L. (adult male by plumage). Shot in Holland, date? (see *Bull. Brit. Orn. Cl.* 49:95) and now in the Rothschild collection at the American Museum of Natural History, No. 734495.

Head and neck—forehead, crown and back of head chestnut running to a point at the nape; auricular region posterior to the eye and extending to the sides and across the back of the neck—metallic green with dark brownish wash behind and below the eye; lores, cheeks and sides of face pale cinnamon which extends to the sides and front of the lower neck; chin and upper throat dark brown, connected to the dark brown below the eye by a narrow vertical bar of dark brown faintly flecked with cinnamon (see plate 2). The lower nape, which in the normal male Teal is black glossed with bluish-violet, is in this specimen black with a faint greenish gloss as in the male Pintail. A faint white line runs from the root of the neck along the sides of the nape as far as the posterior edge of the vertical cheek bar.

Upperparts—mantle, back, sides of body, finely vermiculated greyish-black and buff; upper tail coverts and rump as in male Pintail, tail feathers elongated as in that species.

Wings—primaries sepia as in the males of both parent species; speculum metallic green on all webs, but outer border edged black, then narrowly with pale cinnamon; greater wing coverts mouse-grey broadly tipped with cinnamon as in the male Pintail; longest scapulars with outer webs black and some with inner webs narrowly buffish, forming buff and black line along sides of body above the wings.

Underparts—white with the lower belly and vent finely freckied with dusky grey as in the male Pintail; sides of upper breast faintly spotted; flanks vermiculated greyish-black and buff.



From left to right — Pintail x American Green-winged Teal. Pintail x European Green-winged Teal. Adult male Pintail. Note dusky freckling on belly and vent of both hybrids and spotted breast of the left-hand bird.

(2) *Anas acuta* L. x *Anas crecca carolinensis* Gmelin (adult male by plumage). Shot in Imperial County, California, U.S.A. on 17th December, 1952 (see Howell 1959), now in the collection of the University of California, No. 34590.

Head and neck—forehead and crown blackish-brown as in male Pintail; chin, throat, front of neck and sides of upper neck, brown of the same shade as the cheeks of the male Pintail; on the sides of the head are two irregular patches of pale cinnamon or rufous—the largest is situated anterior to and below the eye, and the smaller one in the auricular region, these are divided by a vertical brown band about 8mm. wide which extends from just below and behind the eye to the brown of the throat; large metallic-green post ocular patch is glossed with brown and extends to the nape; the black-brown of the crown runs down the nape, and the lower nape is black distinctly glossed with violet-purple as in the male Teal; the black-brown of the crown extends to the nape, terminating in a distinct nuchal tuft of steely-blue feathers.

Upperparts—mantle and upper back vermiculated blackish-grey and white; lower back, rump, and upper tail coverts mouse grey; faint trace of cream patch at sides of rump; central feathers of tail elongated as in the Pintail.

Wings—primaries sepia; secondaries with outer webs velvet-black with whitish tips; speculum metallic-green bordered anteriorly by buffish-brown and posteriorly by black margined with white and/or buff; innermost secondaries mouse-grey, the one bordering the speculum with the outer web velvety-black; greater wing coverts mouse-grey with broad cinnamon tips; most scapulars vermiculated blackish-grey with broad bands of velvet-black on outer webs forming a wide streak along the side of the body above the wings; vertical white streak on sides of breast in front of the wings as in the male American Green winged Teal.

Underparts—a distinct narrow white patch at the root of the foreneck merges into pale cinnamon on the sides of the lower neck, and this shade extends on to the upper and middle breast; the upper breast is spotted with numerous blackish spots similar to the male Green-Winged Teal; remainder of underparts white with fine dusky-grey freckling on the lower belly and vent as in the male Pintail; sides of body and flanks vermiculated blackish-grey and white; undertail coverts black edged with white.

Discussion

From the preceding descriptions it will be seen that in plumage both hybrids exhibit characters common to the males of both parent species, this being most noticeable in the colour and pattern of the mantle, back, flanks, vent, and the speculum. The spotted breast of the drake Green-winged Teal is represented in both hybrids, but is most extensive in (2). A distinct drake Pintail character also exhibited by both these hybrids are the broad cinnamon tips to the greater wing coverts. In measurements also the hybrids are absolutely intermediate as shown in Table 1.

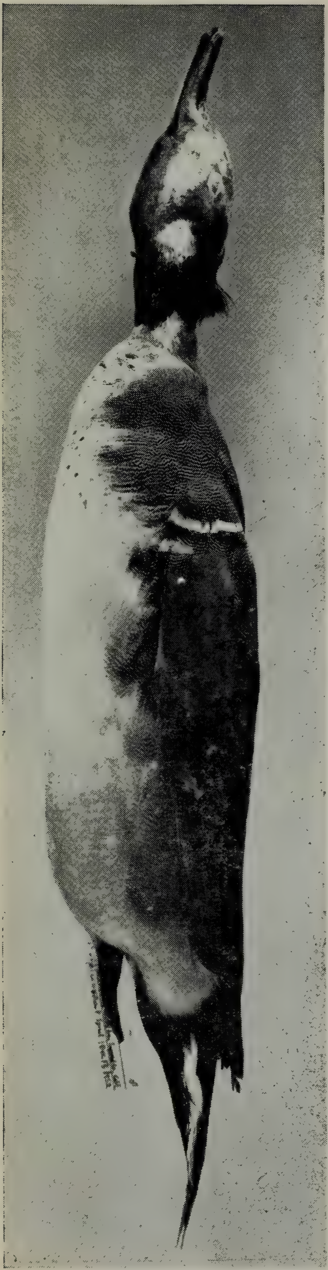
In the case of hybrid (2) the vertical white streak on the sides of the breast just anterior to the wings may have been contributed by the American Green-winged Teal parent, particularly if this species was in fact the male parent. However, although this character occurs in the drake of this species, one should not lose sight of the fact that it is also a normal character of the drake Baikal Teal *Anas formosa* Georgi where it is found in the same locus. Perhaps the most remarkable character exhibited by this particular hybrid, and one that is not referable to either parent species, is the distinct nuchal tuft (see plate 3) of mainly steely-blue feathers which do, however, have a metallic green gloss at certain angles. This remarkable phenomenon has also been recorded in an aberrant drake *Anas crecca crecca* obtained in Kent on 27th January, 1954 (Harrison 1954). It is tolerably certain that the Kentish bird was not a hybrid, and assuming this to be so we now have evidence that an aberrant nuchal tuft or crest can occur with or without interspecific hybridization being involved. It seems perfectly reasonable to regard this phenomenon as a reversionary character towards the Falcated Duck *Anas falcata* Georgi, both sexes of which have a nuchal crest, that of the drake being very highly developed. A character which the drakes of *A.c.crecca*, *A.c.carolinensis*, *A.acuta*, and *A.falcata* have in common is the creamy-yellow patch at the sides of the undertail coverts at their base. In hybrid (2) this is reduced to a vestigial trace only on the upper edge of the coverts.

Table 1
Measurements in Millimetres
of Hybrids and Males of the Parent Species

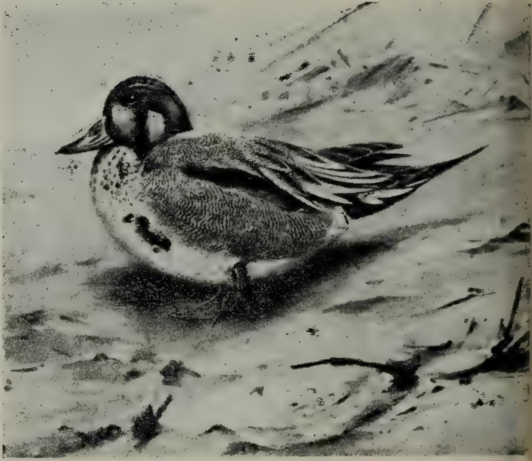
	Wing	*Tail*	*Culmen from feathering*	*Depth of bill at nostrils*
Pintail	254–287	172–209	48–59	16–21*
Green-winged Teal	175–192	62–72	34–38	13–14*
Pintail x American Green-winged Teal	225	135	43	17
Pintail x European Green-winged Teal	–	94	44	17

* 6 measured

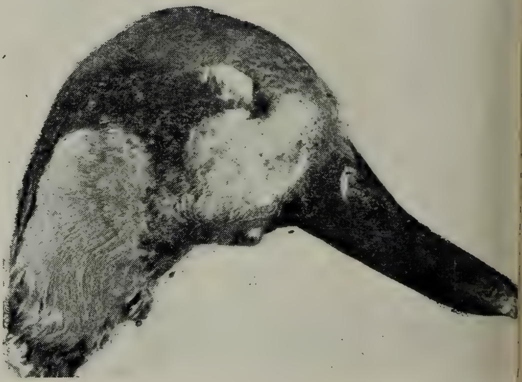
Hybrid (1). It is of interest to compare this bird with that figured in Meinertzhagen (1930) as the parentage is the same in both cases. The Egyptian bird exhibits the following differences when compared with the Dutch specimen—the breast appears to be more heavily spotted; the line along the sides of the body above the wings is black only, whereas the Dutch bird has both a buff and a black line (it should be noted that the American hybrid also has only a black line); the bimaculation of the facial pattern is far more marked than either the Dutch or American hybrids, and the "windows" formed by the vertical brown bar are much paler and more whitish, this is well shown in Plate 1.



Pintail x American Green-winged Teal. Note nuchal tuft, bimaculated facial pattern and vertical white streak in front of wing.



Pintail x European Green-winged Teal, photographe from coloured plate in Meinertzhagen (1930). Not marked bimaculated facial pattern.



Pintail x European Green-winged Teal, showin bimaculated facial pattern.

The Bimaculated Facial Pattern

Bimaculation, in the sense in which I am using it here, means that the facial pattern below the eye consists basically of two divisions or "windows" formed by a vertical bar connecting the ocular region with the throat, this is well illustrated in Plates 1 and 2. As Dr. James M. Harrison (1959) has pointed out, bimaculation and bridling may be considered analogous the difference being primarily one of degree.

I regard the abnormal occurrence of this form of facial pattern as one of the most important phylogenetical characters so far found in the Anatidae and, as in the case of the aberrant occurrence of a nuchal tuft, we now know that it can occur with or without the influence of interspecific hybridization. Including the two hybrids that form the subject of this communication, the following instances of abnormal bimaculation or bridling have now been recorded:—

(a) In Hybrids—

Anas acuta x *Anas crecca crecca*—two cases mentioned above.

Anas acuta x *Anas crecca carolinensis*—one case mentioned above.

Anas platyrhynchos platyrhynchos x *Anas superciliosa*—(Manson-Bahr 1953).

Anas crecca crecca x *Anas clypeata*—(Payn 1949, Harrison 1959).

Anas penelope x *Anas clypeata*—(Harrison 1959).

(b) Without Interspecific Hybridization—

Anas c.crecca—immature drake (Harrison 1945).

Anas c.crecca—aberrant drake (Harrison 1954).

In addition to these we have the so-called "Bimaculated Duck" *Anas glocitans* of Pennant the description of which is now believed to have been based on a hybrid bird, probably *Anas c.crecca* x *Anas p.platyrhynchos* (Harrison 1959).

It is certainly not without significance from an evolutionary and phylogenetic point of view that the two atavistic or reversionary characters discussed above (i.e. bimaculation or bridling, and a nuchal tuft or crest) are to be found normally in the Baikal Teal and/or Falcated Duck, both being species with a Far Eastern distribution. The persistence with which the former character appears in interspecific hybrids or mutants indicates that it must be a very archaic character. These facts support the theory that I have put forward before (Sage 1958), that those species now placed in the genus *Anas* originated from a primitive type which had an Asiatic distribution. The Baikal Teal may well be the modern representative of this ancestral species.

Summary

Two hybrids (adult males by plumage), of Pintail x European Green-winged Teal and Pintail x American Green-winged Teal parentage respectively, are described in detail. It is shown that on plumage pattern and colouring both hybrids exhibit many characters common to the adult males of both the parent species. Both hybrids also exhibit a markedly bimaculated facial pattern, and the importance of this as a reversionary phylogenetical character towards the Baikal Teal is discussed.

Acknowledgements

I am deeply indebted to Dr. Charles E. O'Brien of the American Museum of Natural History, and to Dr. Thomas R. Howell of the Department of Zoology, University of California, for making available to me the two hybrid ducks discussed above. Dr. James M. Harrison kindly lent me comparative material of the parental species from his collection, and has also discussed the hybrids with me. Colonel R. Meinertzhagen has also given me permission to use his plate.

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Francolinus schlegelii Heuglin in Cameroon

by MR. MELVIN A. TRAYLOR

Received 1st February, 1960

While working with the Francolins at the Chicago Natural History Museum I came across a previously unrecognised specimen of *Francolinus schlegelii* Heuglin. It was an adult male, collected 60 miles south of Yaoundere, Cameroon, 13th March, 1953, by A. I. Good. Since this would be the first record of the species from Cameroon, I sent the specimen to Mrs. B. P. Hall at the British Museum with the request that she compare it with topotypes there and confirm my identification. This she very kindly did, and noting that the Cameroon bird was a richer chestnut above and deeper buff below than any topotypical males, she loaned me two males and two females of *schlegelii* so that I might compare them myself. In addition, I have been able to borrow two males and two females from the Ubangi-Shari through the kindness of Dr. Jacques Berlioz of the Museum National d'Histoire Natural and Dr. Charles Vaurie of the American Museum of Natural History.

When the above specimens are layed out geographically, a great deal of variation is evident, but without any apparent pattern. Starting first with males, the two topotypes from Bahr-el-Ghazal are fairly uniform, and since Mrs. Hall selected them to show the extremes of variation of a long series, topotypical males evidently show little variation. They are characterized by having the upper parts chestnut, each feather with a narrow whitish or buff centre stripe edged with dusky and with a faint grayish bloom on the tip. The rump is vermiculated with dusky and in one specimen the vermiculations extend onto the lower back. The crown is dark brown, each feather edged with chestnut at the base and with a faintly paler tip. The ground colour of the under parts varies from whitish to pale buff.

Two males from western Ubangi-Shari are highly variable. The first, from Bozoum, has the chestnut confined to the hind neck and the remainder of the upper parts more gray-brown, vermiculated with dusky, and with only a wash of chestnut at the base of each feather. The second, from Bouar, is almost exactly intermediate between the Bozoum bird and typical *schelgelii*, although geographically it comes from west of Bozoum, away from *schlegelii*. The crown and underparts of both Ubangi-Shari birds are similar to the darker of the two topotypical *schlegelii*.

The Cameroon male, although from a locality even further west, more nearly resembles the Sudan than the Ubangi-Shari specimens, but it is a much darker, richer chestnut above, the vermiculations on the rump are almost lost, the crown is chestnut with dusky centres to the feathers, and the ground colour of the under parts is dark buff, almost as dark as the unbarred throat. It stands out markedly from any of the other specimens.

Female topotypes show more individual variation than males. Of the two specimens available which show the extremes of variation, one has the upper back pale chestnut washed with gray and with narrow whitish shaft stripes grading into a more brownish gray on the lower back and rump. The other has the brownish gray covering the whole back, the pale shaft stripes are almost wanting, and there is only a slight chestnut wash at the base of each feather. Neither shows more than a trace of vermiculation. The crown on the first is a pale brown washed with chestnut, that of the second dark brown.

A female from Ndele, eastern Ubangi-Shari, is intermediate in colour between the two typical females, although more vermiculated on the upper parts than either. A female from the Manongo River (8° 30′ N, 22° E) differs strikingly from all others, however. It is chestnut above and resembles the typical males, except that the shaft streaks are much reduced and there are no vermiculations on the lower back and rump. This is not a missexed male; there is no trace of any spur, the tarsus is short, 29.5, falling into the range of the females, 29–32, rather than of the males, 33–35.5, and the transverse barring of the breast is irregular rather than straight across as in the male. The crown is heavily washed with chestnut, almost as much as in the Cameroon male. This specimen differs so much from all other females that it suggests that two colour phases may be found in this sex.

If only the Cameroon and Sudan specimens were to be considered, I would not hesitate to describe the former as a new race. However, this would almost necessitate recognizing a third race from the Ubangi-Shari, and the present material does not give a clear enough picture of the variation in that territory to support such an action. Considering the extreme variability shown by the Ubangi-Shari populations, long series from each locality are essential to show the extremes of variation to be found in each population. The most that can be done now is to put the facts on record and hope that someone with more material will be able to clarify the problem. If a race from the Ubangi-Shari is to be recognized, the name *Francolinus schlegelii confusus* Neumann (1933, Verh. Orn. Ges. Bayern, 20: 225), type locality Bozoum is available.

The discovery of *Francolinus schlegelii* in Cameroon is a tribute to the collecting skill of Dr. Good, who also discovered *Francolinus albogularis gambagae* in Cameroon at Garoua (Good, 1952, Mem. Inst. Fran. Afr. Noire, Sci. Nat., no. 2, pt. 1 : 67).

The Egg of the Somaliland Pigeon, *Columba olivae* Clarke

by CAPTAIN CHARLES R. S. PITMAN

Received 16th January, 1960

Columba olivae was described by Stephenson Clarke *ibid* 38, p. 61, 1918, but nothing was known about its breeding habits, nor yet where it went between May and September.

On 24th August, 1944, at Eil on the coast of Somalia, lat. 8° N., long. 50° E., which is near this pigeon's southern limit, Mr. M. E. W. North found a 'dropped' fresh egg on the floor of a hole in the roof of a maritime cliff, and within two feet of an unoccupied nest. Examples of these pigeons were seen in the hole.

The egg, which is now in the British Museum (Natural History), measures 37.3 x 25.4 mm. and, as to be expected, is a typical, though rather narrow and elongate, pigeon's egg—white in colour and fairly glossy. In shape it is oval, with a slight point at one end.

The distribution and habits of this bird are discussed by Sir Geoffrey Archer and Eva M. Godman in *Birds of Somaliland and the Aden Protectorate*, Vol. 2, pp. 573–575.

On *Cisticola chiniana procera* Peters

by MR. C. M. N. WHITE

Received 6th January, 1960

Lynes in his Cisticola review (1939) used *procera* for the race of *Cisticola chiniana* found in the lower Zambezi, Nyasaland and northern Portuguese East Africa. At that time he thought that *C. c. frater* extended from northern South West Africa to the middle Zambezi escarpment and was replaced further east by the less streaked *procera*. Vincent states (B.B.O.C. 64. 63–64, 1944) that Lynes was dissatisfied with this arrangement, thought *procera* (described from Tete) indeterminate as too close to *frater*, and wished to rename the race described under *procera* in his review from a locality further east. Accordingly Vincent proposed *C. c. emendata*. For some reason in doing this Vincent still retained *procera* as a named race with a very limited range.

All this appears to have been based on a series of misunderstandings about the distribution of races in this part of Africa. *C. c. frater*, a slightly paler and less streaked bird than typical *chiniana* does not extend anything like so far east, and is mainly found in northern South West Africa and south Angola; from Ngamiland over north Bechuanaland, south Barotseland and east to about Wankie and Matetsi in west Southern Rhodesia occurs the very distinct greyish race *smithersi* Hall. Typical *chiniana* occurs east of this and north of the Zambezi from below the Victoria Falls to the Gwembe and Kariba parts of the Zambezi valley, and north of the valley in the Mazabuka, Lusaka and Namwala districts of Northern Rhodesia. Further down the Zambezi, approximately below the Zambezi-Kafue confluence it is quickly replaced by a much redder, less streaked bird in winter dress, much plainer in breeding dress. Such birds extend up the Luangwa valley to below Mpika and downstream to below Tete, and also occur in the eastern province of Northern Rhodesia and in Nyasaland. Birds from the east of this range are plainer than those from nearer to the eastern edge of the range of *chiniana*, but the latter are easily distinguishable from *chiniana* and the zone of intergradation is very slight.

Thus *procera* was not as Lynes feared based on birds of indeterminate characters close to *frater;* if the name represented a bird different from Lynes' original concept of *procera*, it would be *chiniana*. But birds from well upstream of Tete are in fact quite easily separated from *chiniana*. Thus there seems no doubt that Lynes was right in using *procera* as he did in 1930; his subsequent doubts were unfounded. Variation in *Cisticola chiniana* is almost all clinal and populations over considerable areas are quite variable. I see no point in maintaining both *procera* and *emendata* as distinct races; the whole entity which I include under *procera* is in fact merely a stage of a cline which terminates in the perennial dressed coastal birds known as *heterophrys*, themselves very like breeding *proceraa.*

I am greatly indebted to the Director of the National Museum, Bulawayo for the loan of their entire series of *C. chiniana* totalling several hundred specimens, upon which this note is based, and to Mr. C. W. Benson for looking at the material with me.

Variation in *Euplectes capensis*

by MR. R. E. MOREAU

Received 11th February, 1960

Euplectes capensis is a bird of eastern and southern Africa with an isolated population in the Cameroons. Geographical variation has been noticed in wing-length, tail-length, size and colour of beak, and colour of breeding and off-season plumages; and these characters singly or in combination have been used in defining subspecies.

Table 1 establishes two generalizations:—

(a) The wing-lengths (regarded as a measure of size) to a considerable extent vary in agreement with Bergmann's Rule, as can be seen by comparing them with the temperatures given by Moreau (1957). The smallest birds, with means of 69–72 mm., are from low altitudes in the inner tropics where the mean monthly minimum is never below about 56° F., in Uganda, N.E. Congo, Kenya, Tanganyika, Nyasaland and Portuguese East Africa. Moreover, the higher-altitude tropical populations (Kivu, highlands of Kenya and Northern Tanganyika) are all longer-winged than those of the neighbouring lowlands. Also, the birds of the extreme western Cape Province, which experience almost the coolest winters of any *Euplectes capensis* (means around 44–46°), are the biggest in the continent; but the extent to which they exceed all others is so great that some factor additional to Bergmann's Rule must be presumed to be operating. Finally, the birds of the Rhodesias and the Northern Transvaal, where the winters are cooler than anywhere else under discussion except the Western Cape, are not as big as would be expected.

(b) The tail/wing ratio shows consistent changes that do not seem to have been remarked on before as a whole. Tails are proportionately shorter in the most northern populations, Cameroons, northeast Congo and Abyssinia (ratios 67, 69, 63) and the most southern, Natal and southern Transvaal to Cape (70, 66), while in the intervening populations the tails are longer (ratios 72–76). Admittedly the samples are small, but the results are perfectly consistent. No reason can be suggested for these trends; tail/wing ratio certainly does not rise with increasing wing-length, as shown to take place in the African Zosterops (Moreau 1957). It is particularly remarkable that widely sundered populations in the

TABLE I

Dimensions of *Euplectes capensis* males in breeding plumage.

Area	*No. of specimens*	*Range and mean (mm.)*		*Mean tail/wing ratio*
		wing	*tail*	
Cameroons	14	70–(72.7)–75	47–(49.1)–51	67
Abyssinia	14	73–(76.6)–79	45–(47.8)–51	63
Sudan, S. border	3	all 74	55–(55.6)–56	75
Uganda	13	68–(71)–75	49–(53.2)–56	75
N.E. Congo	6	65–[67.2]–69.5	44–[46.5]–49	69 (A)
West of Ruwenzori	6	70–(72)–74	48–(52.8)–55	73
Kivu	9 (B)	71–[74.2]–77.5	51–[53.5]–56	72
Kenya Highlands	29 (C)	71–(75.5)–80	54–(57.5)–62	76
N. Tanganyika highlands	7 (C)	72–(77)–80	56–(58.3)–61	76
Kenya and Tanganyika lowlands	15 (C)	65–(68.9)–73	49–(52.1)–55	76
Nyasaland, P.E.A.	13	67–(70.5)–75	45–(52.7)–59	75
Northern Rhodesia, Katanga	6	70–(72)–74	52–(55)–57	76
Southern Rhodesia	10 (D)	67–(70)–72	46–[52]–56	73
Angola (E)	5	73–(74.4)–76	53–(56.6)–59	76
Northern Transvaal	12 (D)	73–(75.5)–79	53–[57]–61	75.5
Southern Transvaal, Natal, eastern C.P.	16 (F)	76–(77.5)–81	52–[54.5]–57	70
S.W. Cape	30 (G)	84–(86.7)–92	51–(57)–62	66
North of Cape Town	9 (G)	87–(89.6)–94	55–(59)–62	66

NOTES ON TABLE I

(A) Figures from Chapin (1954). Six specimens from the extreme east of the Belgian Congo north of Ruwenzori, lent by Tervuren, have wings 66–(70.1)–75, tails 46–(50.3)–60, which gives a tail/wing ratio of 72.

(B) Based on Chapin's (1954) figures.

(C) Kenya highlands from Kitui and Kapiti inland; N. Tanganyika highlands, Kilimanjaro, Mbulu, Loliondo; Tanganyika lowlands inland to Ugogo and Njombe. Neunzig in describing *E. c. litoris* quoted 28 males from this last area as measuring 65–70, one 71 and one 72mm.; and in describing *kilimensis* from Kilimanjaro and the Kenya highlands he quoted wings 73–78.

(D) Measurements given by McLachlan & Liversidge (1958).

(E) Malanje and Caconda. Specimens from Mt. Moco and Soque are larger, 74–81—Mrs. B. P. Hall, personal communication.

(F) Measurements given by McLachlan & Liversidge (1958). I have measured 14 specimens from part of the area, Natal including Zululand, with good agreement, *viz.* wings 75–(76.5)–79, tails 50–(53.1)–56, tail/wing ratio 70.

(G) Winterbottom (1959), amplified *in litt.*

(H) Means in square brackets are calculated only from the published extremes, not from a full list of measurements.

Cameroons and Abyssinia should both have short tails. Ratio of length of beak to length of wing is consistent over most of the continent, around 21 per cent; but in *macrorhynchus*, of the northwestern Cape, it is about 25.

Beaks of full-plumaged males are more or less black on the upper mandible, horn-colour or whitish on the lower, throughout the range of the species, except (1) in a dry area less than 100 by 200 miles in the extreme western Cape Province north of Cape Town, where the beak is consistently all white, (2) from the eastern Cape Province to Zululand and the Transvaal, where the lower mandible is nearly always all black. In stoutness of beak there is obscure variation, (apart from the general size of the bird). One example is that, as Serle ('Ibis' 1954 : 78) has pointed out, within the isolated Cameroon populations, the birds of Cameroon Mt. have slightly more slender and pointed beaks than those of Bamenda. No one has attempted to recognise this difference nomenclatorially, but stoutness was cited as a subspecific character of *E. c. angolensis* and of *crassirostris*, described from "north end of Ruwenzori". The first subspecies is recognizable on other grounds (see below), but with *crassirostris* the situation is difficult. The type certainly has a slightly stouter beak than any specimens from Kenya except one from Elgon, but from the neighbouring parts of western Uganda, Ankole, Kigezi and Toro, 9 males have similar beaks to the type and 5 more slender, while birds from Tanganyika consistently have stout beaks comparable with that of *crassirostris*. Mackworth-Praed & Grant (1955), confining their attention to East African birds, did not recognize *crassirostris*, but the difference seems to be exaggerated just outside their limits to the west, because in the extreme northeast of the Belgian Congo Chapin (1954) accepts it. Even, here, however, the position is not very clear. Compared with birds from west and south of Ruwenzori, Chapin gives the depth of beak as 1mm. more in *crassirostris* and the wings as about 7mm. shorter, but in 6 *crassirostris* and 6 others kindly lent by Tervuren I certainly find the beaks of the first group to be a little stouter, but the wings to average only 2mm. shorter, so that the beak-stoutness/wing-length ratio is not nearly so outstanding as Chapin's figures would suggest. Further, one specimen from Wago, L. Albert, within the range of *crassirostris*, does not have a stout beak; yet by contrast one from Abimva, the furthest north locality, is the smallest bird with the longest and stoutest beak. Finally, Tanganyika birds have longer and proportionally stouter beaks than Kenya birds or the Uganda series and some of them match the type of *crassirostris*. On the whole then, it seems necessary to follow Mackworth-Praed & Grant in not recognizing the beak-character as basis for a subspecies.

Colour differences in full-plumaged males are confined to the edges of the primaries (which easily get worn away). From Abyssinia to about the Zambesi wings are all blackish brown with at most a very slight buff edging. Cameroon birds have dull yellow edges, birds from southern Transvaal and Zululand to the Cape yellow edges in fresh plumage (confirmed for western Cape by Winterbottom *in litt.*).

For purposes of "Peters' Check List" it is necessary to decide on the trinomial nomenclature of the species. For the peripheral populations this is easy:—

E. c. phoenicomerus can be used for the isolated birds of the Cameroons Highlands, distinguished from the other short-tailed birds (a) South

African by small size (b) Abyssinian (which they overlap in size) by their paler wings with buff edges. Out-of-plumage males and females have their underparts browner and more obscurely streaked.

E. c. xanthomelas should be limited to Abyssinian birds, cf. Friedmann (1937), on the distinction of their short tails, not extended over East Africa as was done by Mackworth-Praed & Grant (1955).

E. c. angolensis, type-locality restricted to Malanje by Mrs. B. P. Hall (in press), can be maintained on the exceptionally dark colour of non-breeding males. But the Angola birds are far from uniform. Females from Moco and Soque are much more heavily streaked than those from the type-locality. The supposed character of stout beak cannot be verified. In arriving at these conclusions the surviving three of Neunzig's original series, lent from Berlin Museum, have been examined as well as the British Museum series and 5 lent from Chicago Natural History Museum.

E. c. macrorhynchus has been shown by Winterbottom (1959) to be the name applicable to the birds of a coastal strip in the extreme western Cape, between the Berg River and the Orange (on large size, large beak and wholly white beak), and *E. c. capensis* to the birds of Cape Town and a few miles east and north, (on size, and usually pied beak), in distinction to *E. c. approximans* (smaller and with black beak and yellow edges to wings instead of buff) from the rest of Cape Province, to Zululand and the low veld of the Transvaal. It is noteworthy that *macrorhynchus* and *capensis* are known from areas of only about ten thousand square miles each, with abrupt transition east from *capensis* to *approximans*.

We are left with the problem of the nomenclature of the population from Kenya to the northern Transvaal. Within this great area the only variations seem to be in wing-length and, in the neighbourhood of Ruwenzori, stoutness of beak. Both are difficult to use as a basis from trinomial distinction. The beak has been discussed above. The wing-length certainly varies from an average of only 69 in the Kenya and Tanganyika lowland birds to 75 and 77 in the East African highland birds. Since the areas are neighbouring and there is little overlap in the wing-lengths of the "lowland" and "highland" populations a case could be argued for separating them nomenclatorially. If, however, this is done the problem of names for the other populations, with intermediate wing-measurements, is insoluble. There is nothing for it but to call them all by the same name, and since Rüppell's *xanthomelas* of 1840 has to be confined to Abyssinian birds, the oldest name is, unfortunately, *crassirostris*.

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17th May, 20th September, 18th October, 15th November and 20th December.

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The five hundred and eighty-second meeting of the Club was held at the Rembrandt Hotel, S.W.7. on 17th May, 1960.

Chairman: Captain C. R. S. Pitman.

Members present, 16; Guests, 8; Total, 24.

Discussion—
Is the Mute Swan becoming a menace?

A discussion on this subject was opened by Mr. David Wilson, who spoke on the B.T.O. Mute Swan Enquiry. In 1955 the British Trust for Ornithology carried out a breeding season census of Mute Swans and this was repeated in 1956 in certain selected areas. There were approximately 3,000 breeding pairs which with non-breeding birds made a total population probably in excess of 16,000 birds. The south and east of England had the largest number of birds with over 100 breeding pairs reported from Dorset, Norfolk, Somerset and Wiltshire. Urban areas attract a high Swan population with Middlesex having over five times as many pairs per 10 square miles than the average for the rest of the country. The full report of this enquiry which was organised for the Trust by Dr. Bruce Campbell will appear in *Bird Study* in September/December* 1960. An account of the Swans of the London area by Stanley Cramp area will be found in the London Bird Report for 1956.

Major-General C. B. Wainwright spoke of the Abberton Reservoir population. In the past ten years, breeding pairs had increased from 1–2 to 7–8. Non-breeding adults assemble there in July, reach a peak in October and are gone by January. Peak numbers have risen from 300 in 1953 to 500 in 1957. In 1958 there were many deaths associated with food failure, but in 1959 the peak was again 500, but all had gone by late November. He had had 78 recoveries from 240 ringed birds; 29 were diseased and 20 had hit overhead wires. Birds had moved to Kent, Cambridgeshire, Bedford and Huntingdon. Aggresive cobs in the breeding season were responsible for destroying the breeding population of Shelduck on the reservoir.

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*Publication date not yet fixed.

Dr. A. R. Jennings of Cambridge University Veterinary School described the outbreak of severe tape worm infection at Abberton in 1958. This was the result of an increase in swans and a build-up of infection in the water via the intermediate hosts and in 1958, a failure of the birds' underwater food supply resulting from high water levels. He mentioned a severe outbreak of Acuaria infection in Mute Swans on the River Axe in 1954 and stressed such outbreaks as a natural method of population control.

Mr. Clifford Platt, Swan Warden of the Vintner's Company, gave a history of the swans in the stretch of the Thames under his jurisdiction, from H.M.S. ''President'' to Henley. In 1946, 502 birds were counted at ''Swan Upping'' and by 1956 this had increased to 1,234. He noted that they now congregate in large numbers around riverside hotels for food and felt that control was going to become necessary and that egg-pricking was a possible solution.

Mr. J. J. Dallyn spoke as a farmer in the Arun valley, who had suffered from February until late summer for the past two years from a herd of 70 non-breeding adult swans. These did a great deal of damage by destroying grazing, particularly the most valuable early grass and he too felt that something would have to be done to control numbers.

Mr. Robin Harrison spoke on behalf of the Eastern Electricity Board. In this district, ''swan faults'' are now second only to lightening as a cause of breakdowns. The incidence of these has risen as follows:—1954-30; 1955–47; 1956–69; 1957–77; 1958–98; 1959–112. The board tried fitting corks to overhead cables, but this had proved ineffective and to cover the cables with PVC would be far too costly.

Mr. Harrison went on to speak as a wildfowler, stressing the damage done by these birds to the zostera beds on Breydon Water, to the detriment of other fowl, and the damage caused to fresh marsh grazing in East Anglia, where the fouled ground was unpleasant to other birds. He had seen aggressive cobs in the nesting season kill Grey Lag– and Canada goslings and Mallard ducklings. He was very definitely in favour of some kind of control.

Mr. Peter Whittaker felt that the problem was essentially a local one and could not be dealt with on a countrywide basis. Anglers in Berkshire for instance would like to see more swans for weed clearance. Mr. R. S. R. Fitter mentioned the connection between swans and refuse, particularly in the London area and Dr. Jeffery Harrison described damage to zostera beds on Montrose Basin and Tralee Harbour and thought that much effort was wasted in clearing oiled swans, whereas some form of control might well be exercised in these cases.

Mr. Max Nicholson stated that the whole subject was under consideration by the Nature Conservancy, but that the legal aspect was extremely complicated. The exact status of the Mute Swan, whether it was a wild bird or not, was not at all clear in the 1954 Wild Birds' Protection Act, but in this connection, he mentioned the recovery in Britain of a bird ringed in Lithuania. He felt that most careful experiments would be needed into the best method of control, should this be proved necessary.

J.G.H.

A history of the supposed occurrence of the Olive Thrush *Turdus olivaceus* in Ngamiland

by Mr. Michael P. Stuart Irwin

Received 21st March, 1960

It has generally been supposed that the Olive Thrush *Turdus olivaceus* was an inhabitant of the Okavango delta of Ngamiland in the Bechuanaland Protectorate, as this statement appears in all faunal works and check lists published over the last 90 years. The first statement to this effect to appear in print is recorded by Andersson (1872:116) who states that Messrs. J. & H. Chapman had brought away specimens of this thrush from the "Lake Regions", meaning the Okavango delta and Lake Ngami; and it is noted in brackets by J. H. Gurney, who edited the work on Andersson's death, that Bowdler Sharpe possessed a specimen from Lake Ngami collected by Chapman. Sharpe (in Layard) (1875–84:201) then requotes the statement of Andersson; Stark & Sclater (1901:2,177) again repeat that Chapman obtained it at Lake Ngami, as does Reichenow (1904–05: 3,687–88). By this time its occurrence at Lake Ngami is well entrenched in the literature and is duly copied by Sclater (1930:440); Roberts (1940: 232); Vincent (1952:71); and McLachlan and Liversidge (1957:294); this final work being accompanied, in support, by a most improbable distribution map. Thus, through a long history of quote and re-quote, the species has become firmly established as part of the avifauna of Ngamiland.

Apart from the original specimen said to have come from Lake Ngami, the species appears never to have been collected there since. This skin is still in existence, and in the collection of the British Museum (Natural History). Mrs. B. P. Hall has kindly supplied me with details as to its history. Originally it was in the private collection of R. B. Sharpe, and bears a Sharpe Museum label with catalogue no. 188R, but no original collectors label. On Sharpe's appointment to the British Museum, this specimen, along with the remainder of his Sylviidae, Turdidae etc., was transferred to the National Collection and received the British Museum registration no. 76.5.23.550. *Turdus cabanisi* L. N'gami, ex coll. R. B. Sharpe; and is subsequently listed by Seebohm in the '*Catalogue of Birds in the British Museum* 5:229.'

Chapman and his brother operated in South Africa from about 1849 onwards and was still in South Africa when his book in two volumes, *Travels in the Interior of South Africa* appeared in 1868, it having largely been compiled and edited in England from his journals. Chapman's journeys took him from Port Natal and Pietermaritzburg through the Orange Free State and the Transvaal highveld; Kuruman in the northern Cape Province and via the hunting and trade routes, up through Shoshong east of the waterless Kalahari Desert to the Victoria Falls; thence westwards to Lake Ngami and Walvis Bay on the West Coast. These travels back and forth thus covered a wide territory and took many years.

In the second volume of his travels is an appendix (345–424) entitled "Descriptive notes on some of the Birds of Intertropical South Africa." The first section of this appendix (345–387) employs a variety of common and vernacular names in the titles, with a few qualified by generic or specific latin headings; in apparently many instances the names used are the choice of the author. However, from page 388 onwards, the latin nomenclature of the time is largely employed. Descriptions of individual birds are given, with or without an indication of range, but localities are never precise; most of those given are in Damaraland or the vicinity of Lake Ngami which is probably in part why all his collections were presumed to have come from the ''Lake Regions''.

No mention anywhere is made of the Olive Thrush*, yet this and other species not mentioned by him are stated in the earlier literature to have been procured from the ''Lake Regions''. Andersson also quotes *Spreo bicolor* as having been brought back by J. & H. Chapman, but at the same time observed that he had not seen the species to the west of Lake Ngami or north of the Orange River. In this same work, it is stated that Layard had found *Accipiter rufiventris* in Chapman's collection; and *Nectarinia chalybea*, *Nectarinia violacea* and *Nectarinia afra* are all stated to have been in a collection from the same region. With *Nectarinia afra*, Andersson remarks that the species never came under his personal observation, except in the south-east districts of the Cape Colony, and that *Nectarinia chalybea* had never been seen by him north of the Orange River; *Nectarinia violacea* is included on the strength of a like statement on Layard's authority.

These five species all gradually dropped out of the literature as more became known of bird distribution in South Africa. *Accipiter rufiventris*, though quoted by Andersson, is omitted by Sharpe (in Layard 1875–84: 22), but reappears in Reichenow (1900: 1,560–561) after which it drops out entirely. The record of *Spreo bicolor* is quoted by Sharpe (in Layard 429–30); Stark & Sclater (1:30); Reichenow (2: 673–4); Shelley (1906: 5, 85–87); and Sclater (1930:2,668); but is later omitted by Roberts (1940: 316-317) who specifically states that it does not occur into the Kalahari or in South West Africa, on obvious personal knowledge. The record of *Nectarinia afra* is questioned by Stark and Sclater (1:282–84) quoting Andersson in support and is not admitted in any subsequent publication. Shelley (2:75–76) suggests that the specimen was obtained while Chapman was in the Cape Colony. Shelley (86–88) deals similarly with the record of *Nectarinia violacea* which had earlier been omitted by Stark & Sclater (1:293–296). The record of *Nectarinia chalybea* is likewise disposed of by Stark & Sclater and Shelley.

It is important to note, that of the six species quoted as having been obtained in the Lake Regions, none appear in the specific accounts in the appendix to Chapman's work. All would seem originally to have been said to have come from there on Layard's authority. A collection of Chapman's birds must have been examined by Layard, though this would have been subsequent to the appearance of his *Birds of South Africa* in 1867 where no mention is made of his ''Lake Region'' collections, though Chapman is mentioned in the preface of that work. Thus, five of the six erroneous records have been long rejected, only that of *Turdus olivaceus* still stands and seems equally unlikely.

Turdus olivaceus smithi, the form obtained by Chapman, ranges in South Africa from little Namaqualand, the Central and Northern Cape

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* Note that the *Turdus capensis* in Chapman (p. 396) = *Pycnonotus capensis*, not *T. olivaceus* the ''Cape Thrush''.

Province, Orange Free State and the south and western Transvaal. It is much more a form adapted to cover in general savannah conditions than the other races, most of which occur in evergreen forest. *Smithi* seems largely to occupy the ecological niche usually filled by the related *Turdus libonyanus*, the two being mutually exclusive and seem to replace each other geographically in this part of their range (J. M. Winterbottom *in litt.*); as against ecologically further to the north and east, as *Turdus libonyanus* does not range further south than parts of the Transvaal and Natal.

No other specimens of the Olive Thrush have ever been obtained in Ngamiland or at Lake Ngami, or indeed anywhere north of the Orange River, or south of the Balovale district of Northern Rhodesia, where *T. o. stormsi* is found, nor is there evidence that any form of this thrush occurs on the Chobe or elsewhere. Neither Woosnam or Legge found it (Ogilvie-Grant, 1912:355–404); or was it encountered by the Vernay-Lang Expedition of 1930 (Roberts, 1935:1–185) or by de Schauensee (1932: 145–202). The activities of the C.S. Barlow Bechuanaland Protectorate Expeditions, organised and undertaken by the National Museum of Southern Rhodesia, failed to rediscover it, though a special effort was made by the author in this direction. *Turdus libonyanus* was, however, in Ngamiland found to be quite common in riparian growth and occupied the only ecological niche that would otherwise be available to *olivaceus*. Dense riparian forest does exist in the Okavango delta, but chiefly in the upper reaches about Gomare, Sepopa and Shakawe along the main channel of the Okavango at the head of the swamps. If any form of *Turdus olivaceus* occurred, it would be here and would have northern affinities, as on geographical grounds the Okavango delta forms a southern salient in the distribution of many northern species and races, and not *vice versa*.

Hence, as the above discussion shows, there is no evidence whatsoever of *T. o. smithi*, or any other form of the species occurring in Ngamiland. It could be argued, (Mrs. B. P. Hall *in litt.*) that ecological changes and the drying up of Lake Ngami could have extirpated the species locally, but the "Lake" was in the process of dessication at the time of its discovery. In any case a lake level that either fluctuated or continued to decrease in size, would in no way permit the existence of any stabilised botanical association that would be permanently suited to *olivaceus* or *libonyanus*.

It is to be presumed that the original specimen of this thrush collected by Chapman must have been secured along with the other species already discussed, in some part of South Africa, during his long residence in the country, and was probably originally wrongly attributed to have come from Ngami, due to a mistake on the part of Layard through whom Sharpe may have originally obtained his specimen.

In view of the foregoing, and on the evidence given, the distribution of *Turdus olivaceus* must be amended to exclude Ngamiland.

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A new form of *Apus barbatus* from the Victoria Falls

by MR. C. W. BENSON AND MR. M. P. STUART IRWIN

Received, 27th March, 1960

Apus barbatus hollidayi, new subspecies.

Description: Differs from *A. b. barbatus* (P. L. Sclater) in its generally paler colour, tending to be more brownish, less blackish in general appearance, the difference being particularly noticeable on the mantle. Altogether darker, nevertheless, than *A. b. bradfieldi* (Roberts).

Type: ♂, 12th November, 1959, Fifth Gorge, Zambesi River, Victoria Falls, collected by C. S. Holliday. In the National Museum of Southern Rhodesia, Bulawayo, no. 42500, wing 176, tail 76 mm.

Range: Only known from the Victoria Falls, on the boundary of Southern and Northern Rhodesia, and from Mumpswe, on the north-east of the Makarikari Salt Pan, Bechuanaland, at 20° 25′ S., 26° 00′ E.

Remarks: Wing-measurements of material examined are as follows:—

A. b. barbatus	
Eastern South Africa (15)	172–184 (177.7).
Eastern Southern Rhodesia (Melsetter, Inyanga, Chimanimani Mts.) (13)	170–185 (176.0).
A. b. bradfieldi	
South-West Africa (14)	170–182 (175.9).
A. b. hollidayi	
Victoria Falls, 2♂	176, 176.
do. 3♀	174, 175, 179.
Mumpswe 1♂	179.

Apart from the type, the other four specimens from the Victoria Falls were collected by Mr. Holliday on 15th August, 1958. That from Mumpswe was collected on 27th October, 1954. It certainly agrees better in the intensity of the coloration with *A. b. hollidayi* than the other two races, only differing slightly in having an oily green tone, more especially noticeable on the underside.

The differences in colour of the three races reflects climatic differences. Thus *A. b. hollidayi* frequents a much drier area than does *A. b. barbatus* in eastern Southern Rhodesia, but not nearly so dry as that occupied by *A. b. bradfieldi* in South-West Africa. It should also be mentioned that East African birds are still darker than *A. b. barbatus*, and smaller (Lack, 'Ibis', 1956: 51).

The population occupying the Victoria Falls Gorges must be quite isolated from those of *A. b. barbatus* and *A. b. bradfieldi*, through lack of suitable breeding sites in the intervening areas.

We are very grateful to Mr. C. S. Holliday, of the Rhodes-Livingstone Museum, for putting these Victoria Falls specimens at our disposal, four of which he has presented to the Bulawayo Museum. We must also thank Mr. O. Prozesky for the loan of all the material from South Africa and South-West Africa, in the Transvaal Museum. The remainder is in the Bulawayo Museum. All these specimens have also been examined by Major I. R. Grimwood and Mr. C. M. N. White, who both agree that *A. b. hollidayi* should be recognised.

The Paradise Flycatcher *Terpsiphone viridis* in the Port Herald District, southern Nyasaland

by REV. R. CHARLES LONG

Received 14th February, 1960

The following notes supplement those by Benson, 'Bull. Brit. Orn. Cl.' 78, 1958: 133–134, and are from the Port Herald District, southern Nyasaland, from the Portuguese boundary in the south, north to Tangadzi and Chiromo, from altitudes between 200 and 2,000 feet above sea-level. They are in respect of the period mid-July 1951 to early April 1956, and from late September 1957 to early October 1959. Every individual bird seen during these periods has been recorded, and the resultant figures are as follows (the figures in brackets are for a full five-year period, 1952–55 inclusive, and 1958):—

TABLE 1

January	107	(48)
February	145	(109)
March	98	(69)
April	15	(11)
May	34	(31)
June	39	(6)
July	17	(7)
August	18	(11)
September	14	(3)
October	6	(3)
November	80	(60)
December	83	(50)

It is of course possible that some individuals have been recorded on more than one occasion, but nevertheless the above figures are a useful indication of the frequency of the species throughout the year.

In addition, I have collected specimens, assignable to either *T. v. plumbeiceps* or *T. v. granti*, as follows:—

TABLE 2

	T. v. plumbeiceps	*T. v. granti*
January	1	–
February	2	–
March	4	–
April	1	–
May	1	4
June	1	2
July	–	5
August	–	1
September	–	2
October	1	–
November	–	–
December	–	–

The specimens of *T. v. granti* have the sheen on the head green rather than violaceous grey, as in *T. v. plumbeiceps*, as noted by Benson, *op. cit.* They are also generally a rather richer chestnut. Four further specimens, apparently immature, are indeterminate as to sub-species, though of two collected in May, one does appear to be *T. v. granti*, and likewise one each collected in July and August. All twenty-nine of these specimens, now in the National Museum, Bulawayo, have also been examined by Mr. C. W. Benson, who agrees with my identifications. I have also examined a specimen of *T. v. plumbeiceps* collected by Benson near Chiromo, in April 1944, in the British Museum.

The exact earliest and latest dates for definite specimens of *T. v. granti* are 1st May and 14th September, and for *T. v. plumbeiceps* 29th October and 16th June. From the figures in Table 1, it is evident that *T. v. plumbeiceps*, when present, is much more plentiful than is *T. v. granti*, when present.

I thank my wife, and Mr. Benson, for their assistance in the preparation of this paper, also Mr. M. P. Stuart Irwin, of the National Museum, Bulawayo, for lending specimens to Mr. Benson.

(With reference to the notes immediately above, there is now a further specimen of *T. v. granti* from Northern Rhodesia in Bulawayo, collected by Mr. V. J. Wilson in the Fort Jameson District at 13° 24′ S., 32° 17′ E., on 24th September 1959. ———— C. W. Benson.)

Guttera edouardi seth-smithi Neumann 1908 in western Tanganyika Territory

by MR. STAFFAN ULFSTRAND

Received 10th February, 1960

Through the courtesy of the members of the Oxford University Tanganyika Expedition 1959 I have had the opportunity to examine the bird collection obtained by the expedition in the Kungwe-Mahali mountains, Kigoma District, Western Province, Tanganyika Territory.

Among the skins are two belonging to the subspecies *Guttera edouardi seth-smithi* Neumann 1908. They are a male shot on 6th September, 1959 and a female secured the following day. The subspecific identification has been confirmed in the British Museum (Natural History) by Mrs. B. P. Hall for which help I am most grateful.

This seems to be an interesting record from a zoogeographical point of view, as no form of the species *G. edouardi* (Hartlaub) was previously known from western Tanganyika Territory. The present subspecies is said to be distributed over northern Belgian Congo, Uganda and the Kenya Colony, west of the Rift Valley.

On some interesting Bulbuls *Pycnonotus* sp. from the Transvaal

by MR. P. A. CLANCEY

Received 14th March, 1960

The Durban Museum has recently received from Mr. Miles Markus a series of six anomalous and apparently hybrid bulbuls *Pycnonotus* sp. collected near Pretoria, in the Transvaal, mainly during the period 31st

January—1st February, 1960. Four of the specimens are birds of the year in transitional dress from juvenal to first-winter plumage, and a cursory glance at them on receipt resulted in their being classified as *P. n. nigricans* (Vieillot) on the basis of the plumage characters. More critical examination later revealed that in all instances the eye-wattle was black and not orange as in the two races of *P. nigricans*, in this respect agreeing with the races of the *P. barbatus* (Desfontaine) complex. In the dark Fuscous (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. xlvi) throat and upper breast, somewhat streaked lower breast, greyish olive-brown upper-parts and rather small size, the specimens concerned agree closely with our very extensive material of *P. n. nigricans*, the only palpably difference being that in all cases the eye-wattle is black. In freshly moulted examples of *P. b. layardi* Gurney the chin is black, but the throat and upper breast are abruptly paler and of a colour close to Olive-Brown (pl. xl), and the upper-parts lack the greyness of *P. n. nigricans*, while in size they are larger. It is quite evident that the six Pretoria specimens of bulbuls collected by Mr. Markus are intergrades between *P. n. nigricans* and *P. b. layardi*, and add immeasurably to the weight of evidence in favour of considering these two "species" as conspecific.

In his recent valuable study of the relationship between *P. nigricans* and *P. barbatus*, Irwin, *vide Occ. Papers Nat. Mus. Southern Rhodesia*, 22B, 1958, pp. 198–201, shows that the two "species" intergrade to a limited degree in the eastern Bechuanaland Protectorate. Irwin's records coupled with the new findings based on birds from further to the south-east (Pretoria), suggest that we must henceforth consider *P. nigricans* races and *P. barbatus* races to be conspecific. The valid races of the enlarged species *P. barbatus* occurring within the South African sub-continent are as follows: *P. b. layardi*, *P. b. tenebrior* Clancey, *P. b. ngamii* Ogilvie-Grant, *P. b. tricolor* (Hartlaub), *P. b. nigricans* and *P. b. superior* Clancey. *P. b. pallidus* Roberts, described from northern Portuguese East Africa, is doubtfully separable from *P. b. layardi.*

The true position of the localized *P. capensis* (Linnaeus) of the western, south-western and southern Cape Province is still unresolved, though on the basis of distribution it can be no more than a well-marked geographical race, which is conspecific with the contiguous subspecies of the highly polytypic *P. barbatus.* A final decision on the taxonomic placing of *P. capensis* must await detailed study of its populations at their points of contact with *P. b. tenebrior* (Sundays River, eastern Cape) and *P. b. superior.*

I have recently received four further specimens of bulbul from Pretoria collected by Mr. Miles Markus on 20th February, 20th March and 13th April, 1960, which agree closely with those collected earlier.

In the light of the above note, it would now seem highly desirable to see a recently-taken series from Rustenburg, in the western Transvaal, the type-locality of *P. b. layardi* Gurney, 1879. In the event of the topotypical populations of *P. b. layardi* being found to resemble the birds from Pretoria discussed above, it may be found necessary to restrict the use of the name *layardi* to western Transvaal population, and adopt another name for the remainder of the numerous populations in the eastern half of southern Africa at present embraced in the taxon *P. b. layardi.*

On the question of the type-locality of *Mirafra africanoides* Smith, 1836

by Mr. P. A. Clancey

Received 4th February, 1960

White, *Bull. B.O.C.*, vol. 80, 1, 1960, pp. 10, 11, discusses once again the vexed question of the type-locality of the nominate race of the Fawn-coloured Lark *Mirafra africanoides* Smith, 1836: Eastern Province of the Colony and Latakoo, averring that as Roberts, *Annals Transv. Mus.*, vol. 16, 1, 1935, p. 121, had already restricted the type-locality to Litakun (near Kuruman), in the northern Cape Province, the restriction of the type-locality to Colesberg, north-west eastern Cape Province, by Macdonald, *Contr. Orn. West. South Africa*, 1957, p. 94, was unnecessary. White's interpretation of the situation appears to be incorrect, as in actual fact Roberts, *loc. cit.*, does not formally restricted the type-locality of *M. a. africanoides*, simply stating that as the species concerned does not seem to extend into the eastern Cape Province, Litakun (near Kuruman) must be taken as the type-locality. At the time of writing the note in question, Roberts seems to have overlooked the fact that the species does occur in the north-western districts of the eastern Cape in the vicinity of Colesberg and Hopetown (see Shelley, *Birds of Africa*, vol. iii, 1902, p. 59). The material in the British Museum (Nat. Hist.), London, from the Smith collection, which is almost certainly paratypical, seems to be composed of examples of two or more races: dark, heavily streaked birds, almost certainly collected south-east of the Orange River—Vaal River confluence, and some paler specimens which seem to have emanated from the populations of the northern Cape Province and southern Bechuanaland. Our knowledge of the nature of Smith's paratypes of *M. a. africanoides* and of the character geography and distribution of this lark in the south-central portion of its range, confirms the accuracy of Smith's statement as to the provenience of his new lark. It was simply due to an oversight on the part of Roberts that he stated—quite erroneously—that as it does not occur in the first locality mentioned by Smith, *i.e.*, Eastern Province of the Colony (=eastern Cape Province), the second locality, namely, Litakun, must be accepted. In my view this is simply a statement of fact, as the facts were understood by Roberts at the time of writing the note in question; it is not a formal restriction of the type-locality as normally accepted in avian systematics.

Apart from the purely legal aspects of this question, study of the description and coloured figure of *M. a. africanoides* in Smith, *Illustr. Zool. South Africa*, Aves, pl. lxxxviii, fig. 2, 1843 (and text), suggests that *M. a. africanoides* rightly belongs to a form with fairly heavily streaked upperparts, such as is found in the north-western districts of the eastern Cape, in which the feather centres are Fuscous (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. xlvi) and the fringes Sayal Brown (pl. xxix). Smith, *loc. cit.*, writes as follows, "Head superiorly umber-brown, all the feathers edged and narrowly tipped with a tint intermediate between reddish and orpiment-orange . . . interscapulars and back dull umber-brown, the feathers edged with a light reddish orange." Had he been describing birds from Kuruman and localities to the northward, the description in the *Illustrations*, and possibly the coloured figure, too, would have been very different, as in such populations the Fuscous areas of the dorsal feathers are suppressed to narrow, almost vestigial, lanceolate striae, and are often absent. This results in the dorsal surface being nearly as uniform as in the South-West African *M. a. harei* Roberts, 1917: Windhoek, Damaraland. In the freshly moulted specimen of such populations the mantle colouration is about Cinnamon (pl. xxix).

From the above it will be appreciated that Macdonald's restriction of the type-locality of *M. a. africanoides* Smith, 1836, to Colesberg (not Colesburg (sic!)) is in strict conformity with the evidence provided by Smith's original specimens in the British Museum (Nat. Hist.) and the pertinent literature. It is unfortunate that Mr. White's contribution does not take into consideration my note on this interesting question in the *Durban Mus. Novit.*, vol. v, 8, 1958, pp. 99–101. A more recent note in the same publication, *op. cit.*, vol. v, 16, 1959, pp. 198, 199, also touches on this matter, while even more recently the S.A.O.S. List Committee, *vide Ostrich*, vol. xxx, 3, 1959, p. 111, has bestowed formal recognition to Colesberg as the officially accepted type-locality of *M. a. africanoides.*

In my recent work on the interior populations of this lark, I recognise the populations of Griqualand West and Bechuanaland, northern Cape Province, as discrete from *M. a. africanoides* and *M. a. harei* under the name *M. a. quaesita* Clancey, 1958: Rietfontein, Griquatown-Niekerkshoop road, Asbestos Mountains, northern Cape.

A note on the African Jaçana, *Actophilornis africanus* (Gmelin)

by Capt. Charles R. S. Pitman

Received 14th March, 1960

Chick carrying. According to Cave and Macdonald (1: p. 121) "Has been photographed carrying chick against its breast". In this connection Mr. C. W. Benson has sent me the following observation, which was made by Major W. E. Poles of the Northern Rhodesia Department of Game and Tsetse Control on 15th March, 1949, in the Bangweulu swamps, at 11° 45′ S., 30° 00′ E.

"I actually shot an African Jaçana that was carrying two newly hatched chicks but had no idea that it had young until I shot it. We surprised the bird as we came out from a narrow channel in the reeds into an open sheet of water, covered with lily pods. The Jaçana instead of flying off, as is usual, squatted on a lily leaf. It was too close so I allowed the canoe to pass. The bird then rose and went off at a good pace in a rather crouched attitude, just above the level of the water. When sufficiently far away, about 15 yards from where we first saw her, I fired and killed her. To my surprise I picked up two newly hatched chicks both killed with the mother by a single charge of dust from the .410. It was obvious that the only place she could have held them was beneath her wings".

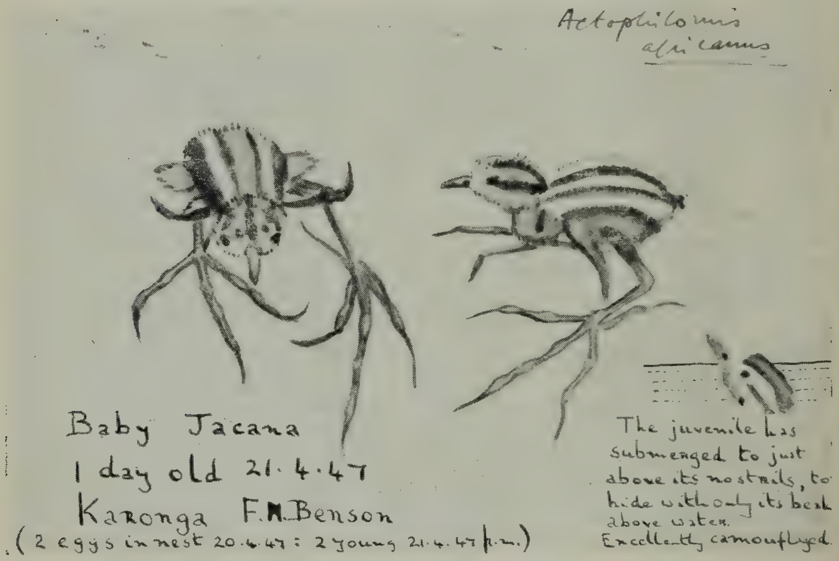
Benson has seen these specimens in the National Museum, Bulawayo and comments "The two chicks are obviously only just out of the egg".

Down chick plumage. Chapin (2: p. 59), evidently with some diffidence, records "according to Emin, a chick taken from the egg was wholly velvet-black, its bill flesh-red with whitish tip, and the large feet reddish gray with dark claws. His mention of the size of the feet would seem to obviate any error''. In my own experience Emin's description is absolutely wrong and sounds more like that of a chick of the Black Crake, *Limnocorax flavirostra* (Swainson). Also it seems that Emin was unable to relate the chick to the egg, for the egg of *Actophilornis* is unmistakable.

Two down chicks, less than a week old, I collected on Lake Bunyonyi, in South-western Uganda, which are now in the British Museum (Natural History), have: the crown bright chestnut, edged black; the back chestnut-brown, long chestnut hairs predominating; nape and neck blackish shading broadly at base to sooty of ¼ inch width; pale duller brown on flanks with chestnut patch; tuft of black hairs on rump; cheeks, sides of neck and below whitish; bill, horn above and dull pale yellowish below; legs and feet, blue-grey with claws, horn.

The illustration, which is the photograph of a coloured drawing by Mrs. Benson, clearly shows the striped plumage of a day-old chick, and its exaggerated feet and legs at this early age.

Through the courtesy of the Director, I have examined Major Poles' two similarly striped chicks which are in the National Museum at Bulawayo. In these the bright chestnut median body stripe is divided by a narrow black streak and is edged black, with a conspicuous white lateral stripe which is then boldly edged black merging into the blackish flanks—with a chestnut patch posteriorly. Rump blackish; below white; thigh mainly white, with some black inside and posteriorly. The chestnut head is conspicuously marked with a median black stripe which broadens posteriorly at the back of the crown and on the nape: the forehead and cheeks are white.


Actophilornis
africanus
Baby Jacana
1 day old 21·4·47
Karonga F.M.Benson
(2 eggs in nest 20.4.47 : 2 young 21.4.47 p.m.)
The juvenile has
submerged to just
above its nostrils, to
hide with only its beak
above water.
Excellently camouflaged.

The bill is horn above and paler below; the dry legs appear shiny black, tinged olive.

As the down chicks grow they lose their striped appearance, and chestnut coloration predominates above.

The above remarks indicate how erroneous is Emin's description.

Chicks mode of hiding. The two Lake Bunyonyi down chicks were on a floating, semi-submerged weed patch some distance from the shore. In their efforts to escape they were expert at diving and hiding under the weed, and only one then came to hand. The other was caught three days later. Benson informs me that at Karonga, in Nyasaland, two recently hatched chicks submerged with only the bill and nostrils above the water level when his wife approached them too closely (see drawing).

Bannerman (3: p. 79) refers to this method of concealment, by the adults, "If occasion arises—for instance, should it be wounded—it swims and dives well, hiding itself among the leaves and grass of the pond with only its bill above water".

Distraction behaviour by parents. When I was trying to catch the two chicks on Lake Bunyonyi, the parents were exceptionally noisy, uttering a plaintive 'teeter-ing' cry, besides going through a variety of antics, including the 'wounded' bird demonstration, with trailing wing or wings and eventual collapse.

Posture of the head and neck in flight. Priest (4: p. 162) quotes Swynnerton, that when *Actophilornis* makes a somewhat prolonged flight "the neck is curved back, with the head resting down between the shoulders". I have never witnessed this, nor have any of the authoritative observers to whom I have referred this matter. I have invariably seen the head and neck outstretched when in flight. On landing, or when skipping from one piece of aquatic vegetation to another, *Actophilornis* has the curious habit of raising its wings butterflywise, perpendicularly above its back.

References:—
(1) Cave, F. O. and Macdonald, J. D. *Birds of the Sudan*, 1955.
(2) Chapin, J. P. *Birds of the Belgian Congo*, II, 1939.
(3) Bannerman, D. A. *Birds of Tropical West Africa*, II, 1931.
(4) Priest, C. D. *Birds of Southern Rhodesia*, II, 1934.

The Status of *Campethera bennettii vincenti* Grant & Mackworth-Praed

by Mr. C. W. Benson

Received 17th February, 1960

This form was described by Grant & Mackworth-Praed ('Bull. Brit. Orn. Cl.' 73, 1953: 55), on the basis of part of the material also examined and discussed by myself ('Ostrich' 23, 1952: 152). These specimens are in my opinion, as already shown, intermediate between *C. b. bennettii* (Smith) and *C. b. scriptoricauda* (Reichenow. The latter form is treated by Mackworth-Praed & Grant ('Birds of Eastern and North Eastern Africa' 2, 1952) as a subspecies of *C. nubica*, an arrangement with which I cannot agree. I also feel that *C. b. vincenti* is so unstable, and occupies so restricted an area, near the boundary of south-western Nyasaland with Portuguese East Africa for less than 150 miles north/south, that it is not worth recognising.

A new name for the Himalayan Red-winged Babbler, *Pteruthius*

by Dr. Biswamoy Biswas

Received 28th February, 1960

The Himalayan Red-winged Shrike-babbler, currently known as *Pteruthius e. erythropterus*, was originally christened by Vigors [1831, Proc. zool. Soc. Lond., (1): 22] as *Lanius erythropterus* (type locality Himalayas, restricted to Murree, West Pakistan, by Baker, 1922, Fauna Brit. India, birds, 2nd ed., 1 : 331). Vigors' name is, however, preoccupied by *Lanius erythropterus* Shaw (1809, Gen. Zool., 7: 301) and cannot be used. The next name available for the Red-winged Shrike-babbler is *Pteruthius erythropterus validirostris* Koelz (1951, J. zool. Soc. India, 3:28; type locality Kohima, Naga Hills), so that the specific name for it will be *Pteruthius validirostris* Koelz. No valid name appears to be available for the Himalayan populations, for which I propose

Pteruthius validirostris ripleyi, new name,

in honour of Dr. S. Dillon Ripley, an eminent worker on Indian ornithology.

Recent records from north-western Northern Rhodesia

Part One

by Mr. C. W. Benson

Received 17th February, 1960

The following records are mostly from the Balovale and Kabompo Districts, though a few from northern Barotseland are also included. They are the result of collecting by Mr. W. F. H. Ansell during June 1958 to April 1959 (about 600 specimens), by Major I. R. Grimwood during September 1959 (more especially selective, about 100 specimens), and myself during September to November 1959 (about 500 specimens). Ansell's interest is primarily in mammalogy, and I much appreciate the time and interest he has devoted to this (to him) side-line. Both he and I have been greatly assisted by the perspicacity of Mr. Jali Makawa.

As a result of these activities, one form not in the Northern Rhodesia Check List (1957), *Alcedo quadribrachys guentheri*, is recorded. All the other records either amplify information about little known forms, or represent extensions of known range. A few recent records from elsewhere in the territory are mentioned incidentally. Specimens in or near breeding condition are indicated by "X". Localities not cited in the Check List, or otherwise specified hereafter, are as follows:— Kabeti, on Zambesi River at 15° 04′ S., 22° 58′ E.; Mayau, at crossing of Mayau River by Mwinilunga-Kabompo Road, at 12° 45′ S., 24° 16′ E.; Mutangini, at confluence of Manyinga and Luansongwe Rivers, 13° 10′ S., 24° 11′ E.; Lake Mwange, 13° 35′ S., 22° 25′ E. Records from the North Kashiji River are at 13° 07′ S., 22° 00′ E.; from the South Kashiji River at 13° 32′ S., 22° 40′ E.; and from the Lungwebungu River near 13° 35′ S., 22° 19′ E. The Kashiji River given in the gazetteer to the Check List is the North Kashiji. ''Kabompo'' and ''Mankoya'', without any appendage, refer of course to the District Headquarters.

All specimens mentioned are in the National Museum, Bulawayo, and I have to thank Mr. M. P. Stuart Irwin for the loan of many specimens. I am also grateful to Mrs. B. P. Hall for a copy, in the galley-proof stage, of her paper for 'Bull. Brit. Mus. (Nat. Hist.)' on Angolan birds. I am further indebted to them, and to Major Grimwood and Mr. C. M. N. White for advice and information on various points.

Gypohierax angolensis (Gmelin).

One seen by me on the Lungwebungu, 19th November, where Phoenix palms were abundant. Mr. W. ff. Fisher has described to me a bird, undoubtedly this species, seen by him at Sakeji, where Raphia palms occur.

Falco rupicoloides rupicoloides Smith.

♀, 24th November, Balovale District at 13° 35′ S., 22° 35′ E.

From a pair on a watershed plain. Stomach-contents beetles and fragments of other insects. I have also seen a specimen collected by Mr. Rudyerd Boulton at Lumege, eastern Angola, at 11° 35′ S., 20° 45′ E. One was caught alive near Chunga Pools, south-western Barotseland, in October 1957, for a coloured photograph of which I am indebted to Mr. E. A. Zaloumis, which Stuart Irwin has compared with specimens. There are sight-records of single birds from Lochinvar Ranch by Messrs. B. L. Mitchell and A. J. Tree, respectively on 6th and 12th July, 1959.

Aviceda cuculoides verreauxi Lafresnaye.

♀, 29th January, Kabompo; ♀, 27th November, Mankoya District at 14° 30′ S., 24° 10′ E.

Stomach-contents of the second specimen insect-fragments, including grasshoppers, and of one collected near Lusaka, 15th September, beetles and grasshoppers.

Francolinus levaillantii clayi White.

♂X, 20th November, Lungwebungu; ♂X, 24th November, South Kashiji.

Wing 163, 171 mm., compared to 162, 170, 175, 174 mm. respectively in three males and one female from the high-level Nyika Plateau (*F. l. crawshayi* O.-Grant). It might be expected that the Nyika birds would be larger, but these figures do not suggest it. But they are decidedly less dark, not so blackish, on the upperside, especially on the crown.

Local information was to the effect that egg-laying takes place in October and November. Both specimens appeared to be in full reproductive condition, while of two flushed on 21st November, one was not more than three-quarters of the size of the other. The species was only noticed on the drier edges of plains bordering the Lungwebungu and South Kashiji Rivers, among small grey ant-hills, and is apparently absent from the rather higher watershed plains, though why this should be so is not clear. It is known locally as Lisongela, while *F. coqui* is Kateto and *F. afer* Ngwali. Specimens of these latter two were also obtained, *F. coqui* inhabiting Burkea woodland and *F. afer* rank grass growth near water.

But no information was obtained about *F. albogularis*, for which no local name appears to exist. White tells me that the three specimens of *F. a. meinertzhageni* White ('Bull. Brit. Orn. Cl.' 65, 1944: 7) which he collected were obtained in the same locality and habitat as the South Kashiji specimen of *F. l. clayi* recorded above.

Guttera edouardi subspp.

In Cryptosepalum forest in Mankoya District at 14° 30′ S., 24° 10′ E., feathers of this species were picked up in several places, and it is well known locally under the name Mpololo. There can scarcely be any doubt that the subspecies is *G. e. kathleenae* White ('Bull. Brit. Orn. Cl.' 64, 1943: 19), because when I inquired as to the colour of the throat, my informant at once pointed to a red cigarette-tin. On the other hand, two specimens recently obtained by Mr. J. M. C. Uys at the Kafue/Lufupa confluence, 14° 37′ S., 26° 11′ E., are *G. e. edouardi* (Hartlaub).

Larus fuscus fuscus Linnaeus.

♂, 19th September, Kabeti.

With two other individuals. Compared by Messrs. C. W. Mackworth-Praed and D. Goodwin with material in the British Museum, and considered to be probably a pale individual of *L. f. fuscus*, though showing some intergradation with *L. f. graelsii* Brehm.

Musophaga rossae Gould.

2 juvs., 6th April, Kabompo, 19th November, Lungwebungu.

Both specimens must be less than two months old. They measure respectively, wing 167, 163; tail 127, 133 mm. On the underside they are wholly dull black; upperside in Kabompo specimen not so strongly violaceous in tone or so glossy as in adults, while the other is still mainly black, with only a little non-violaceous, unglossy blue showing; crimson in wings not so extensive as in adults, in fact red rather than crimson in tone; crest mainly black, only a little red showing; bill and bare skin around eye black.

Alcedo quadribrachys guentheri Sharpe.

♂, 17th November, Lake Mwange; ♀, 23rd November, South Kashiji.

Wing respectively 79, 77; culmen from base 53, 47 mm. From dense riparian evergreen growth. In the Belgian Congo *A. quadribrachys* does not appear to be known south of Kasaji, whence I have seen a specimen in the Congo Museum, Tervuren. Hall (1960) gives a sight-record from the Luau River, in eastern Angola. White tells me that on the Zambesi at Balovale, only some twenty miles east of the Kashiji locality, he has collected *A. atthis semitorquata*, the ecological requirements of which and of *A. quadribrachys* are evidently very similar. *A. quadribrachys* seems to be no more than a richly coloured geographical representative of *A. a. semitorquata*. It is unlikely that they could co-exist, and they may be best regarded as belonging to different groups within the same species.

Caprimulgus natalensis Smith.

2♀, 11th January, Mayau.

One is a juvenile, with wing 138, tail 73 mm., compared to wing 166, tail 104 mm. in the other. The juvenile is not so dark above, more spotted in appearance, and was probably from an egg laid in November.

Lybius leucomelas frontatus (Cabanis).

♂X, 14th November, South Kashiji; 2♂, 30th November, Mankoya District at 14° 30′ S., 24° 10′ E.; ♂, 19th February, Kabompo.

Not uncommon in the second locality, and seen by me near the Lungwebungu. Also collected 18 miles north of Senanga, and in the Gwembe District at 16° 31′ S., 27° 40′ E. All these records are from Brachystegia woodland, except those from the Balovale District, from Burkea. On the other hand, in Acacia woodland in south-western Barotseland at 17° 15′ S., 23° 46′ E. and 17° 36′ S., 23° 23′ E., I have collected *L. l. centralis* (Roberts), also known in Northern Rhodesia from Livingstone (wrongly shown in the Check List as *L. l. leucomelas*). See Stuart Irwin ('Bull. Brit. Orn. Cl.' 78, 1958: 19), the ranges of the two forms are now shown to approach each other even more closely, but there is no indication of any intergradation. Mr. D. H. Gray tells me that he collected a clutch of two fresh eggs of *L. l. centralis* in south-western Barotseland on 2nd December.

Mirafra africana kabalii White.

5♂, ♀, all X, 15/23rd November, Balovale District at 13° 35′ S., 22° 35′ E.

All in heavy moult, yet the female (15th November) held two yolking oocytes, one of diameter 9 mm. From a watershed plain, and curiously, not noticed in the habitat already described for *Francolinus levaillantii*.

Mirafra angolensis minyanyae White ('Bull. Brit. Orn. Cl.' 78, 1958: 163).

♂, 15th November, Balovale District at 13° 35′ S., 22° 35′ E.

Found alongside *M. africana*, but apparently much less plentiful.

Mirafra africanoides trapnelli White.

2♂, 12th November, 2♂, ♀, 25th November, Balovale District at 13° 32′ S., 22° 50′ E.

From scrub-grassland (the types SK2 and SK5 of the vegetation-soil maps of Northern Rhodesia by Trapnell *et al.*, 1950), and White agrees that it must be almost entirely restricted in the Balovale District to a narrow belt of country between the South Kashiji and the Zambesi. Two months previously I had collected the species in a very similar habitat near Chiolola, south-western Barotseland (17° 14′ S., 23° 50′ E.), whence it has also been recorded by Winterbottom ('Bokmakierie' 6 (2), 1954: 40). It must be very local in this area too, though there are specimens from scattered localities west of the Zambesi to as far north as about 15° 40′ S. All four Balovale males showed some gonad-activity, and one collected on 25th November had both testes measuring as much as 6 X 3 mm. It is likely that they would have bred in December.

Turdus olivaceus stormsi Hartlaub.

3♂, all X, 15th September, 13th/14th November, South Kashiji.

All from riparian evergreen forest. Compared with three specimens from the Mwinilunga District from 11° 40′ S. northwards and nine from the Northern Province. There is considerable variation in colour. On the upperside two of the Kashiji specimens are very grey, almost lacking in any olive tone, but agree with a male from Choma (Mweru Marsh). The other Kashiji specimen is more distinctly olive and agrees closely with a Mwinilunga specimen. The two others from Mwinilunga and several from the Northern Province are still more olive. On the underside there is also considerable individual variation, in the brightness of the orange-rufous colour and in the extent of grey on the chest. There is also variation in the wing-measurements, as follows:—South Kashiji, 3♂, 118, 125, 129; Mwinilunga District, 2♂, 120, 120, ♀, 120; Northern Province, 6♂, 124, 125, 125, 129, 130, 133, 3♀, 121, 126, 126 mm. White ('Bull. Brit. Orn. Cl.' 69, 1949: 57), in describing *T. o. williami*, gives two specimens from the Kansoku forest as having wing 135, 136 mm. These appear to represent the extreme of variability of size, and White agrees with me that it is best to call all Northern Rhodesian birds *T. o. stormsi*. Hall (1960) records a similar great variability in Angola, in *T. o. bocagei*.

Acrocephalus rufescens niloticus (Neumann).

♂, 3rd August, 15♂, 6♀, 30th October/25th November, Mutangini, Mayau, Lake Mwange, Lungwebungu, South Kashiji.

These specimens are inseparable subspecifically from a series from the Northern Province and the Luamala River, already discussed by Benson ('Bull. Brit. Orn. Cl.' 78, 1958: 91). Four specimens in all now available from the Luamala/Lukanga area are slightly whiter below and paler above than any others, but the difference is not such as to merit designation by name. Wing-measurements of these more recent specimens are:—♂, 77 (three), 79 (five), 80 (three), 81 (three), 82 (two); ♀, 75, 77 (two), 78 (three) mm. They were collected in papryus, except at Mayau and on the South Kashiji, in Phragmites reeds.

Camaroptera fasciolata buttoni (White).

2♂, ♀, 10th September, 10 miles east of Mankoya.

C. f. stierlingi (Reichenow) was recorded in the Check List from Mankoya, but these specimens are clearly *C. f. buttoni*, as also are one from Chiolola (17° 14′ S., 23° 50′ E.) and one from the Gwembe District at 16° 31′ S., 27° 40′ E.

Carmaroptera simplex katangae (Neave).

♂, 14th February, 3♀, 14th February, 24th April, 4th May, Kabompo; ♂, 27th October, Mayau; ♂X, 26th November, Balovale District at 13° 46′ S., 23° 30′ E.; ♂X, 27th November, Mankoya District at 14° 07′ S., 23° 52′ E.

This and the preceding species replace each other in Northern Rhodesia, see Benson, Stuart Irwin & White ('Proc. Pan-Afr. Orn. Congr.', 1959: 410), and for further recent records see Benson (1959: 270). Winterbottom ('Ibis', 1942: 372) records *C. fasciolata* from two localities in the Mankoya District, but tells me that actually he only obtained a specimen ten miles west of the District Headquarters.

Eremomela icteropygialis subspp.

♂, 16th September, 3♂, 3♀, o, 2 juvs., 18th/21st November, Lungwebungu; ♂, 24th June, Chavuma.

Discounting the juveniles, all these specimens show a varying degree of intensity of olive-green wash on the back and mantle. None of them are as green as a specimen from Luluabourg, but they can be placed as near *E. i. salvadorii* Reichenow. The two juveniles, probably from eggs laid in early October, are a uniform brownish grey above, and, unlike adults, show no contrast between the bluish grey crown and the green mantle. Also, they are a more or less uniform yellow below, this colour even extending up to the chin. Of two adult specimens from the Manyinga River, and four from Kambopo, only one shows a mere trace of the green wash.

They are better placed with *E. i. polioxantha* Sharpe. On the other hand, a specimen from 29 miles west of the Victoria Falls especially, though also six from Barotseland (Chiolola, 17° 14′ S., 23° 50′ E.; Mongu; 10 miles east of Mankoya), compared to a long series of *E. i. polioxantha*, are greyer, less white, on the chin, throat and chest, while the yellow of the abdomen is more greenish in tone, not so bright. According to Smithers *et al.*, Southern Rhodesia Check List (1957: 163), these specimens should be *E. i. perimacha* Oberholzer. But the assignment of a name must in fact await further investigation, see Clancey ('Durban Mus. Novit.' 5 (16), 1959: 206).

Cisticola aridula perplexa White.

3♂, o, 18th/19th September, near North Kashiji; 4♂, 2♀, 15th/24th November, Balovale District at 13° 35′ S., 22° 35′ E.

A female collected on 24th November held a yolking oocyte in the ovary. This species was only found on watershed plains, and appears to be segrated locally from *C. juncidis* and *C. brunnescens*. *C. juncidis* was only observed and collected on plains in the immediate vicinity of both the South Kashiji and the Lungwebungu, and *C. brunnescens* the Lungwebungu. *C. textrix* was not found at all, but may not show any segregation from *C. aridula*, as both are known locally from a watershed plain, the Minyanya, see the Check List and Benson (1959: 285).

Cisticola galactotes subspp.

♂, 2♀, 15th/19th September, 4♂X, 4♀, 13th/23rd November, South and North Kashiji, Lake Mwange, Lungwebungu.

The September specimens are still in winter dress, the others in summer dress. Wing-measurements (in mm.) of these and other material examined (disregarding in a few instances collectors' sexing) are:—Balovale District, 4♂, 63, 65, 66, 67; 4♀, 56, 57, 59, 59: Barotseland (Mongu, Shangombo, 35 miles west of Nangweshi), 4♂, 60, 63, 65, 67; 2♀, 57, 57: Caprivi Strip (South-West Africa), 13♂, 58–64, average 61.2; 6♀, 53, 54, 54, 55, 55, 56: Kafue Flats, 10♂, 59–63, average 60.9; 3♀, 53, 54, 57: Lukanga Swamp, 1♂, 62; 3♀, 53, 54, 55: Northern Province, 6♂, 60, 61, 62, 62, 63, 63; 1♀, 54: Lake Rukwa, southern Tanganyika Territory, 5♂, 57, 57, 59, 60, 61; 3♀, 52, 52, 53: southern Nyasaland and lower Zambesi, 5♂, 58, 58, 58, 59, 59: eastern Southern Rhodesia, 1♂, 61; 1♀, 53. These figures suggest a cline of decreasing size from west to east. The name *C. g. schoutedeni* White ('Ann. Mus. Congo, Tervuren' 4, Zool. 1, 1954: 106) may be used for the Balovale specimens and for four from the Shangombo/Nangweshi area, though not for two from Mongu, on colour better placed with the remainder. The specimens of *C. g. schoutedeni* have the black centres of the feathers of the mantle larger and more pronounced, while in summer dress the crown is rather darker, less rufous. On the underside, in both summer and winter dress, they tend to be slightly whiter, due to a reduction of buffy wash. The remainder may all be placed with *C. g. galactotes* (Temminck), of which White, who has recently been studying this species, considers *C. g. luapula* Lynes to be a synonym.

Cisticola pipiens congo Lynes.

♂X, 2♀, juv., 13th November, South Kashiji; ♂, 3♀ (one X), 15th/17th November, Lake Mwange; 2♀, 19th/21st November, Lungwebungu; juv., 25th February, Manyinga River.

One of the females from Lake Mwange was in process of laying, while the juvenile from the South Kashiji had skull-ossification less than 25% complete. The Manyinga juvenile is not even fully grown, having wing 53, tail 33, culmen from base 12 mm. only. A juvenile from Kabeti, 8th September, had skull-ossification about 20% complete. This swamp-dwelling species, and also *C. galactotes*, must have an unusually extensive breeding season, see especially the breeding data for the latter in Benson's Nyasaland Check List (1953).

Lynes ('Ibis', 1934: 31) noted incidentally that, unlike *C. galactotes*, the juvenile dress of C. *pipiens* has no trace of yellow below. This applies to all three juveniles recorded above. The South Kashiji and Manyinga specimens are *white* below, with rufous confined to the flanks, while the Kabeti specimen, and three from the Northern Province (two with skull-ossification not started) are as rufous as adults on the underside. On the upperside all six are a general tawny rufous, the mantle broadly streaked with sepia, the crown more finely so. Two juveniles of *C. galactotes*, in which skull-ossification had not started, are heavily washed with *sulphur-yellow* below.

C. pipiens and *C. galactotes* were found side by side in the first three localities cited above, and I could discern no ecological difference whatever.

(*to be concluded in next issue*)

Anthreptes collaris patersonae Subsp. Nov.

by MR. MICHAEL P. STUART IRWIN

Received 24th April, 1960

In the *Bulletin B.O.C.* Vol. 80, pp. 65–67, in describing a new race of the Sunbird, *Anthreptes collaris* from eastern Southern Rhodesia, through an unfortunate error in the original description this form was named *pattersoni*, this being a lapsus for *pattersonae* after the lady in whose honour the new form was named. The error was corrected in the proofs, but through a misunderstanding, the description went to press before the proof corrections were received by the editor. I, therefore, take this opportunity to correct this mistake. The name of this new race must therefore, be amended accordingly to read:—

Anthreptes collaris patersonae Subsp. Nov.

It should also be added that among the races which I have examined and consider recognisable is *A. c. phillipsi*.

Ornithological Brains Trust

The Club plans to hold an Ornithological Brains Trust for the Chirstmas meeting on Tuesday, 20th December. We hope to have a panel of distinguished ornithologists with Sir Landsborough Thomson in the Chair. Club members at home and overseas are invited to send in questions suitable for discussion by the Brains Trust to Mrs. B. P. Hall, The Bird Room, British Museum (Nat. Hist.), London, S.W.7.

Notices

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Back numbers of the "Bulletin" can be obtained at 3/– each. Applications should be made to R. A. H. Coombes, Esq., Zoological Museum, Tring, Herts. No reply will be sent if parts are not available.

Members who have back numbers of the "Bulletin" which they no longer require, are requested to kindly send them to R. A. H. Coombes, Esq., as above.

DINNERS AND MEETINGS FOR 1960

20th September, 18th October, 15th November and 20th December.

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Contributors who desire free copies of the "Bulletin" containing their notes should state so on their MS., otherwise these will not be ordered. These will be supplied up to a maximum of fifty.

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Members who make a contribution at a Meeting should hand the MS. to the Editor at that Meeting. It is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any), and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

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The Club will pay for a reasonable number of black and white blocks at the discretion of the Editor. If the contributor wishes to have the blocks to keep for his own use afterwards, the Club will not charge for them, as has been done in the past.

Communications are not restricted to members of the British Ornithologists' Club, and contributions particularly on taxonomy and related subjects will be considered from all who care to send them to The Editor, Dr. J. G. Harrison, "Merriewood", St. Botolph's Road, Sevenoaks, Kent.

Communications relating to other matters should be addressed to the Hon. Secretary, Mrs. B. P. Hall, c/o The Bird Room, British Museum (Natural History), Cromwell Road, London, S.W.7.

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Edited by
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BULLETIN
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- 6 OCT 1960
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Volume 80
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The five hundred and eighty-third meeting of the Club was held at the Rembrandt Hotel, S.W.7. 20th September, 1960.

Chairman: C. R. S. Pitman.

Members present, 28; Guests, 4; Guest of the Club, Dr. and Mrs. R. K. Dell, Total, 34.

Influence of man on the birds of New Zealand

by Dr. R. K. Dell

An account of a talk given to the Club on 20th September, 1960

An account of the total effect of man on the birds of New Zealand would be a complete ornithology of the country. The following account therefore will deal with some general aspects of the topic with an attempt to draw comparisons with the British Isles when applicable.

The history of European colonization extends over a little more than a hundred years. In that time the lowland countryside has been completely altered, as has much of the accessible hill country, and much of the rest of the land has been modified to some extent. Until some forty years or so back, any account such as this would have been largely the story of the extinction of some species, the increasing rarity of others, the exploitation of some species and intentional or purposeless interference with many. Any forecast for the future would have implied the rapid replacement of a native avifauna by introduced species.

Until recently the most noticeable feature of New Zealand from an ecological view point would have been its lack of stability and complete lack of balance between man and his activities, and the landscape, plant cover and associated animals. There are signs that such a balance is being achieved in some areas but one of the most marked contrasts between New Zealand and the British Isles would still be the degree of difference in ecological balance. This is largely due to the fact that the changes that have taken place gradually in the British Isles over the last 2,000 years have been compressed in New Zealand into a mere 100 years.

The effects of man on the New Zealand avifauna may be considered under the following heads:

1. The influence of native peoples on the birds. Maori settlement dates from a series of migrations stretching probably from about A.D. 925

to A.D. 1350. The Maoris probably assisted in the extinction of the giant flightless birds, the Moas. In general they used birds for food and their feathers and skins for clothing but probably altered the environment only slightly. It is estimated that there were about 200,000 Maoris in New Zealand at the time of European discovery.

2. The period of European discovery and exploitation, 1642 to 1840. Little real effect apart from the introduction of the pig which became wild.

3. The period of European settlement, 1840 to present. The effects upon the birds may be summarised under the following heads:

(*a*) very rapid and widespread alteration to the plant cover.
(*b*) introduction of active predators such as rats, stoats, weasels, cats and dogs.
(*c*) introduction of other species which have assisted in radically changing the plant cover e.g. deer of many species, oppossums and domestic animals which have since become wild, e.g. cattle, horses, goats, etc.
(*d*) introduction of active competitors. Thirty five species of birds have been successfully introduced.
(*e*) increased exploitations for food. The human population has greatly increased.
(*f*) the complete destruction of some areas as bird habitats.
(*g*) the collection of some of the rarer species for scientific or pseudo-scientific purposes.

The immediate result was the rapid disappearance of many, if not all native species from settled localities. Many species became very rare and some became extinct.

Counter measures were gradually instituted. The first major step was blanket protection but this has been followed by active conservation, the establishment of sanctuaries and most important an active policy of education about birds through the schools and other agencies. Research into some of the species is gradually supplying information that will allow conservation to be based upon scientific knowledge.

For one cause or another, there are signs that over the last forty years or so a number of native species have succeeded in adapting themselves to the very changed ecological conditions, while many others are surviving and becoming more plentiful in marginal areas. Some of the terrestrial forms will probably fail to survive except in sanctuaries but some of our isolated species are apparently proving more adaptable than had at first been feared, so that the ways in which specialised species may survive changed ecological conditions may be studied.

Recent records from north-western Northern Rhodesia

PART TWO

by MR. C. W. BENSON

Received 17th February, 1960

Prinia flavicans bihe Boulton & Vincent.

2♂, 16th/18th September, 2♂X, 6♀, o, 18th/20th November, Lungwebungu; ♂X, 24th November, South Kashiji.

Compared with material from south of the Zambesi, darker above, yellow of underside more greenish. Four of the females and the unsexed specimen, which instead of having a black bill have it dark brown, pale at the base of the lower mandible, with signs of a yellow gape-wattle, must be immature, probably from eggs laid in early October. They have the black markings on the chest in the form of discontinuous spots. The other two females (showing some breeding activity) have the spotting on the chest darker, while in the November males the spotting is more coalescent, almost forming a continuous band. The two September males, evidently still in winter dress, have the chest markings reduced to a few spots or streaks, and the crown has a streaky appearance. They are certainly adult, as the bill is black, and the skull in both is recorded as fully ossified. Several of the adult males tend to have the crown greyish, contrasting with a greenish mantle. One collected on 20th November had both testes as much as 5 x 4 mm. Five males have wing 52, 54, 55, 57, 57; six females, 54, 56, 56, 57, 58, 59 mm. This species was found mostly in scrub growth in abandoned cultivation on dry ground, whereas *P. subflava*, at Lake Mwange and the Lungwebungu, was largely confined to reed growth near water.

The most recent taxonomic discussion is that by Stuart Irwin ('Bull. Brit. Orn. Cl.' 79, 1959: 128). When practicable, Balovale specimens should be compared with material of topotypical *P. f. bihe*, in order to confirm that they really are identical. Benson ('Bull. Brit. Orn. Cl.' 76, 1956: 32) was only able to compare three Balovale specimens with the type of *P. f. bihe*.

Prinia subflava subspp.

6♂, 4♀, 18th/20th November, Lungwebungu; 2♀, 16th November, Lake Mwange; 6♂, ♀, 20th December/24th February, Kabompo District; 4♂X, 29th/30th November, Mankoya District at 14° 30′ S., 24° 10′ E.

All these specimens are in breeding dress. Those from the Lungwebungu and Lake Mwange are darker above than in *P. s. affinis* (Smith) and still more so than in *P. s. bechuanae* Macdonald. On the underside they show a reduction of tawny on the flanks, which are also paler, thus in these two respects agreeing with *P. s. bechuanae* rather than *P. s. affinis*. They may be placed with *P. s. kasokae* White, the remainder with *P. s. affinis*. White, who has examined these and a very long series of other specimens with me, and has been studying this species as a whole, agrees also that two specimens in breeding dress from northern Mwinilunga District are indistinguishable from *P. s. affinis*. Specimens from Kabompo and Chavuma attributed by Benson (1959: 285) to *P. s. graueri* Hartert, and recorded as showing a perennial mode of dress, are in fact *P. s. affinis* in non-breeding dress, though of course this does not invalidate the likelihood that in northern Mwinilunga District there is a perennial mode of dress, see Benson (1959: 274).

Hirundo cucullata Boddaert.

♀, 15th November, Balovale District at 13° 35′ S., 22° 35′ E.

This specimen, apparently the first from Northern Rhodesia, was hawking over a watershed plain, and was the only individual seen during two weeks spent by me in the Balovale District west of the Zambesi.

Psalidoprocne orientalis reichenowi Neumann.

2♂X, 8th and 17th April, ♀, 8th April, Kabompo; ♂X, 28th November, Mankoya District at 14° 30′ S., 24° 10′ E.

The female is immature, with skull-ossification not started. It differs from the other specimens in being glossy greenish brown above and dark brown below without any gloss, instead of being both above and below glossy, slightly greenish, black. The outermost pair of rectrices measure 48.5 (central pair 40) mm., compared to 65 (45), 70 (49), 70 (47) mm. respectively in the adults. A similarly coloured young bird was collected by Mr. C. S. Holliday over the Zambesi at Sesheke, 28th August. It has outermost rectrices 47, innermost 39 mm., and must have been an individual wanderer in this locality. I spent a week there with Holliday, and this was the only one seen. *Vide* the Check List, I saw many, in groups of four or five, in well developed Brachystegia, nowhere near any evergreen forest, along the Kasempa-Kabompo-Balovale road, on 11th/12th November.

Laniarius bicolor sticturus Finsch & Hartlaub.

3♂, 15th September, 13th/14th November, South Kashiji; ♂, 2♀, 15th/16th November, Lake Mwange.

From thick riparian growth, in which very common. The males have wing 108, 109, 109, 109, the females 100, 106 mm. Further to the notes by Hall ('Ibis', 1954: 348), there appears to be not a single record of the smaller *L. aethiopicus* from Barotseland or the Balovale District west of the Zambesi; yet the National Museum, Bulawayo now possesses some fifteen specimens of *L. bicolor* therefrom. Recently, travelling through the waterless country between the Zambesi and the Mashi Rivers south of 17° S., I saw *L. atrococcineus* commonly in thickets, but never *L. aethiopicus*. In the southern Sesheke District, east of the Zambesi, the position was reversed, and three specimens of *L. aethiopicus* were collected. There are also recent specimens of *L. aethiopicus* from Mayau, Kabompo and the north of the Mankoya District (of two females collected in Cryptosepalum forest in the latter area on 28th November, one was laying, the other was at its nest containing three heavily incubated eggs). But why it should be absent in the Balovale District west of the Zambesi is not clear. The genus is apparently unrepresented there in thickets away from water.

Tchagra minuta anchietae (Bocage).

♂, 9th February, Kabompo; 2♀, 15th October, Mayau.

These, and other specimens from the North-Western Province east through Ndola to Kasama and Mpika, have been compared with the Southern Rhodesian material examined by Clancey ('Durban Mus. Novit.' 5 (16), 1959: 214), named by him *T. m. remota*. The differences which he describes are readily apparent. Furthermore, the Northern Rhodesian specimens have the black on the head slightly glossed bluish, instead of a plain matt black. A specimen from Port Herald, southern Nyasaland, is also certainly *T. m. remota*. It has wing 76 mm. Measurements of Northern Rhodesian material (not seen by Clancey) are:—♂, 76, 77, 78, 78, 78, 78, 81; ♀, 76, 76, 77, 77, 77, 77, 78, 78 mm.

Anthoscopus caroli subspp.

♂, 16th September, ♂, ♀, 18th/21st November, Lungwebungu.

Intermediate between *A. c. caroli* (Sharpe) and *A. c. winterbottomi* White, one specimen in particular showing no trace of green on the upperside, thus closely resembling the former. Six further specimens from Kabompo, in addition to that mentioned by Benson (1959: 285), are near *A. c. winterbottomi.* Attention may be drawn to the paper by Benson ('Rev. Zool. Bot. Afr.' 52, 1955: 156–158), in which he discusses in some detail the various races in Northern Rhodesia and adjacent territory, not referred to by Ulfstrand ('Bull. Brit. Orn. Cl.' 80, 1960: 11–13).

Lamprotornis acuticaudus (Bocage).

♂, 16th October, Mayau; 2♂, juv., 19th/20th November, Lungwebungu.

Measurements in mm. as follows:—

	Wing	*Central rectrices*	*Outermost rectrices*
♂	130	101	75
♂	123	89	70
♂	129	91	67
juv.	109	63	50

Of the two Lungwebungu males, one had irides red, the other orange, while the juvenile had irides dark brown. This latter could only recently have been fledged. On the upperside it is glossy green, on the underside blackish sepia tinged glossy green, with buffy margins to the feathers. Skull-ossification had not started. By contrast, the other specimens are glossy blue above and below, only relatively slightly tinged green.

Ploceus xanthopterus castaneigula (Cabanis).

♂, 3♀, 8th September, Kabeti; 6♂, 2♀, 15th November, Lake Mwange.

The Lake Mwange males are moulting into breeding dress, in three the moult being almost complete, though none showed any marked gonad-activity. Wing measurements as follows:— ♂, 76, 78, 79, 82, 82, 82, 82; ♀, 69, 69, 71, 72, 72 mm. A male in off-season dress was collected at Sesheke, 24th August, wing 85 mm. For other Northern Rhodesian records, see Benson (1959: 279).

Amblyospiza albifrons montana van Someren.

♂, 2nd November, Mutangini.

It was suggested by Benson (1959: 281) that *A. a. kasaica* Schouteden might extend into the north-west of Northern Rhodesia. But this specimen does not exhibit the very dark colour emphasised by Schouteden for that form, and cannot be separated from Northern Rhodesian specimens assigned by Benson to *A. a. montana.* Moreover, its wing measures 100 mm., while Schouteden gives the wing of males of *A. a. kasaica* as 90–94 mm. only. A male of *A. a. maxima* Roberts from Senanga has wing 107 mm.

Moreau ('Bull. Brit. Orn. Cl.' 79, 1959) has discussed variation in this species in eastern and southern Africa. Since writing my notes on specimens from Rhodesia and Nyasaland (Benson, 1959), I have been able to compare them with specimens of *A. a. montana* in the Coryndon Museum, Nairobi, from near the type-locality, and could see no marked difference.

Pirenestes ostrinus frommi Kothe.

♂, ♀, 23rd November, South Kashiji.

From dense riparian forest. Both adult. Wing respectively 71, 69; width of lower mandible at base respectively 14.5, 13.5 mm. The male showed some breeding activity, having testes measuring 3 x 2.5, 4 x 3 mm. An adult male collected by me at Sakeji, 19th October 1957, in evergreen forest, has wing 69, width of lower mandible at base 14 mm. As already recorded in the Check List (p. 142), Grimwood collected a male at Sakeji (in evergreen forest, he confirms) with measurements 71, 14 mm. On the other hand, specimens from a similar habitat in the Northern Province have the width of the bill 17–18.5 mm. (Benson, 'Bull. Brit. Orn. Cl.' 75, 1955: 109). But at Kasaji, in the Congo, Chapin ('Bds. Belg. Congo' 4, 1954: 495) records a variation from 12 to 19 mm. in specimens apparently all from gallery forests.

Ortygospiza atricollis subspp.

♂, 16th October, Mayau; ♂, ♀, 2♂, ♀, 20th November, Lungwebungu.

The first three specimens are *O. a. fuscata* Sclater, the remainder *O. a. polyzona* (Temminck). The Lungwebungu specimens were all collected literally within a few yards of each other, on the drier parts of plains adjoining the river. Benson (1959: 285) records *O. a. polyzona* from Kabompo. In the North-Western Province there may be an ecological as well as a geographical overlap between the two forms, though Benson ('Bull. Brit. Orn. Cl.' 75, 1955: 107) suggests that in the Northern Province, while there is a geographical overlap between *O. a. fuscata* and *O. a. smithersi* (the latter with the same type of coloration as *O. a. polyzona*), there is generally an ecological difference. This is a problem worthy of investigation in Africa as a whole, though it appears that locally, in Northern Rhodesia, there exist forms behaving as separate species.

Granatina bengala katangae (Vincent).

12♂, 4♀, juv. ♂, January–April, Kabompo; ♂, ♀, 26th October, Mayau; ♂, 27th November, Mankoya District at 14° 30′ S., 24° 10′ E.

These specimens have been compared with eight males and five females from the Northern Province. There is considerable individual variation in the blue colour of males in both series, from a greenish blue to a more intense, almost ultramarine, blue. But there is no constant difference in either colour or measurements. Although no material from Chavuma, the type-locality of *G. b. semota* (White), has been available, White agrees that it may be regarded as a synonym of *G. b. katangae*. Kabompo and Mayau are both less than 120 miles from Chavuma, and note also the distribution of *G. b. katangae* given by Chapin ('Bds. Belg. Congo' 4, 1954: 563) and Schouteden ('Vog. Belg. Congo' 9, 1958: 379).

Eight of the males collected at Kabompo, between 22nd December and 10th February, showed gonad-activity, while a female collected there on 24th January contained several enlarged and yolking oocytes. The juvenile male was collected on 24th January, and was not fully grown, having wing 50, tail 34 mm., compared to wing 52–55, tail 46–58 mm. in twenty-two adult males.

Other forms

The following further forms, at least one specimen of each of which was collected from each locality cited, are worth brief mention, such further details being cited in each case as considered necessary:—

Aquila dubia (Smith), Manyinga River at 13° 17′ S., 24° 13′ E.; *Accipiter tachiro sparsimfasciatus* (Reichenow), Mankoya District at 14° 30′ S., 24° 10′ E.; *Coturnix chinensis adansoni* Verreaux, Mankoya District at 14° 50′ S., 25° 15′ E.; *Gallinula angulata* Sundevall, ♂X, 20th January, Manyinga River at 13° 10′ S., 24° 11′ E.; *Charadrius forbesi* (Shelley), North Kashiji, 19th September; *Arenaria i. interpres* (Linnaeus), ♀, 17th November, Lake Mwange; *Tockus alboterminatus geloensis* (Neumann), Mankoya District at 14° 10′ S., 23° 55′ E.; *Mesopicos griseocephalus ruwenzori*, ♂, South Kashiji, wing 110, culmen from base 25.5 mm.; *Phyllastrephus cerviniventris* Shelley, Kabompo; *Muscicapa boehmi* (Reichenow), 10 miles east of Mankoya (2♂X, 10th September); *Erythropygia leucophrys munda* (Cabanis), Mayau, Mankoya District at 14° 30′ S., 24° 10′ E.; *Chloropeta natalensis major* Hartert, Kabompo, Mayau; *Cisticola woosnami lufira* Lynes, Mankoya District at 14° 30′ S., 24° 10′ E.; *Melocichla mentalis grandis* (Bocage), Chavuma, Mayau; *Dicrurus l. ludwigii* (Smith), South Kashiji; *Malaconotus nigrifrons manningi* Shelley, Kabompo District at 12° 36′ S., 24° 32′ E. and 12° 41′ S., 24° 15′ E.; *Malaconotus viridis vieirae* (White), Mayau, Mutangini; *Nectarinia olivacea lowei* (Vincent), Mayau; *Ploceus intermedius cabanisii*, ♂ in full breeding dress, 5th November, Kabompo; *Quelea erythrops* (Hartlaub), 2♂X, 22nd October, 14th January, Kabompo (both with red on head fully developed, one with it moulting in seen on South Kashiji, 13th November); *Euplectes a. albonotatus* (Cassin), ♂ in full breeding dress, 3rd January, Kabompo; *Anomalospiza i. imberbis* (Cabanis), Kabompo, Mayau; *Lonchura bicolor nigriceps* (Cassin), Kabompo, including juv., skull-ossification not started, 6th April; *Ortygospiza l. locustella* (Neave), Lungwebungu, Mankoya District at 14° 50′ S., 24° 15′ E.; *Lagonosticta rubricata haematocephala* Neumann, Mankoya District at 14° 30′ S., 24° 10′ E; *Lagonosticta caerulescens perreini* (Vieillot), Kabompo, River Kabompo at 14° 00′ S., 23° 40′ E., Mankoya District at 14° 30′ S., 24° 10′ E.; *Serinus capistratus* (Finsch), ♀, 15th October, Mayau, skull-ossification not started; *Emberiza cabanisi orientalis*, 10 miles east of Mankoya (also seen by me 30 miles west thereof). I have definite sight-records of *Smithornis capensis* and *Schoenicola brevirostris* from Mankoya District at 14° 30′ S., 24° 10′ E., whence a male in breeding condition of *Cossypha natalensis* was also obtained, 30th November.

References:—

Benson, C. W. 1959. Some additions and corrections to a 'Check List of the Birds of Northern Rhodesia'. Number 2. 'Occ. Papers Nat. Mus. S. Rhod.' 23B: 257–285.

Hall, B. P. 1960. The ecology and taxonomy of some Angola birds. 'Bull. Brit. Mus. (Nat. Hist.)'. In press.

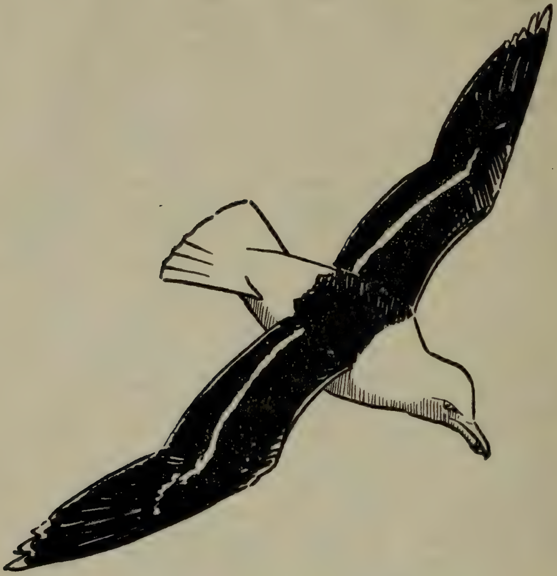
A variety of the Lesser Black-backed Gull

by MR. J. M. E. TOOK

Received 14th December, 1959

On reading the recent references to colour aberrations in Black-backed Gulls and Corvines in the *Bulletin*, I was reminded of an isolated case in a Lesser Black-backed Gull, *Larus fuscus*, which I sketched off Leathercote Point, St. Margaret's-at-Cliffe, near Dover, Kent, on 16th September,

1949. There was a most marked white bar the length of each wing, which as far as I could see was caused by the tips of the major wing coverts—not by white quills of the secondaries. The bar (which might have been as much as half an inch thick) ran the length of the secondaries and curved round the primary coverts before fading out, as can be seen from a copy of my original sketch.



The Oldest Name for the Roseate Pipit

by Mr. H. G. Deignan

Received 14th March, 1960

In Peters's Check List of Birds of the World, vol. 9, 1960, p. 160, footnote 1 (attached to *Anthus roseatus* Blyth, 1847), we find stated: "The name *pelopus* Hodgson, 1844 (in Gray's Zool. Misc., p. 83—Nepal), has been revived. It is, however, a *nomen nudum*". The author here probably refers to *Anthus pelopus* "Hodgson", cited from Gray's Zoological Miscellany by Delacour (Oiseau et Rev. Franç. d'Orn., vol. 21, 1951, p. 115).

The availability of *pelopus* as oldest valid name for the Roseate Pipit was brought to this writer's attention by the late Sir Norman Kinnear, whose death in 1957 interrupted and prevented publication of the results of his investigations on Hodgson. The correct citation should have been given by Delacour thus: *Anthus pelopus* J. E. Gray, Catalogue of the Specimens and Drawings of Mammalia and Birds of Nepal and Thibet, presented by B. H. Hodgson, Esq. to the British Museum, 1846, p. 154—Nepal.

Since *pelopus* J. E. Gray, 1846, has one year's anteriority over *roseatus* Blyth, 1847, it continues to be the correct name for the species listed as *Anthus roseatus* Blyth in Peters's Check List, vol. 9, p. 160.

The Oldest Name for the Bat-eating Pern

by MR. H. G. DEIGNAN

Received 14th March, 1960

Peters (Check List of Birds of the World, vol. 1, 1931, p. 194) lists the Bat-eating Pern as *Machaerhamphus alcinus* Westerman, with both generic and specific names cited from "Bijdr. tot de Dierk., 1, 1848, p. 29, pl. 12."

It should be noted that the year 1848 was date of issue only of Aflevering 1 of the Bijdragen tot de Dierkunde. Aflevering 2, in which Westerman's name appeared, was issued in 1851, as has been pointed out by Sherborn (Index Animalium, A-B, p. xvii), and Sherborn's decision is supported by the fact that Volume 1, Aflevering 2, of the Bijdragen was not received by the Académie des Sciences at Paris until 22nd September, 1851.

The generic name *Machaerhamphus* Westerman, 1851, is in fact only an emendation of *Macheiramphus* Bonaparte, published in Rev. et Mag. Zool., sér. 2, tome 2, [not earlier than Sept.] 1850, p. 482 (type, by original designation and monotypy, *Macheiramphus alcinus* Bonaparte, here first described, with type locality "la presquîle de Malacca").

The correct name for the Bat-eating Pern is, accordingly, *Macheiramphus alcinus* Bonaparte, 1850, since both the generic and specific names have one year's anteriority over *Machaerhamphus alcinus* Westerman, 1851.

A New Race of the Brown Barbet from Thailand

by MR. H. G. DEIGNAN

Received 14th March, 1960

Calorhamphus fuliginosus detersus, subsp. nov.

Type: U. S. Nat. Mus. No. 324284, adult female, collected at Ban Sichon [lat. 9° 00′ N., long. 99° 55′ E.], Nakhon Si Thammarat Province, Thailand, on 19th May, 1930, by Hugh McC. Smith; original number 3917.

Diagnosis: Nearest *C. f. hayii* of Malaya, but easily distinguishable by having the chin and throat but *slightly* suffused with a *paler* brick red, and by having the remaining under parts silky white suffused with *pale primrose* instead of brownish red.

Range: The Malay Peninsula from the Mergui District of Tenasserim and the Isthmus of Kra southward to the Siamese province of Trang (where some individuals show approach to *hayii*).

Remarks: The adult of *detersus* closely resembles the immatures of both *detersus* and *hayii* in the colouration of the under parts.

The races of the Bokmakierie *Telophorus zeylonus* (Linnaeus), with the characters of a new form from South-West Africa

by MR. P. A. CLANCEY

Received 20th March, 1960

The handsome black-collared, green and yellow shrike *Telophorus zeylonus* (Linnaeus), 1766: Cape of Good Hope, is a relatively common species of the South African sub-continental avifauna, ranging in the west from Cape Town northwards to the coastal deserts of Angola, and in the east to the borders of the thornveld in Natal, Swaziland and the Transvaal. Two races are admitted in our formal subspecific arrangement of the populations, which is based on the work of Hartert[1], these being *T. z. zeylonus* and *T. z. phanus* (Hartert), 1920: Farta Bay, south of Benguela Town, south-western Angola. When describing *T. z. phanus*, Hartert suggested that the populations lying between topotypical nominate *T. zeylonus* and the south-western Angola race might prove separable from either, but the problem has received little attention since Hartert's time. The ranges of *T. z. zeylonus* and *T. z. phanus* have never been satisfactorily defined, and some workers extend the range of the latter race south to the Orange River, while others restrict it to south-western Angola and perhaps extreme north-western South-West Africa, in so doing extending the range of *T. z. zeylonus* to the northern limits of Darmaraland at least. In order to resolve the question of the subspecific status of the *T. zeylonus* populations occurring in those western parts of the South African sub-continent lying between the Orange and Cunene Rivers, I have recently assembled a large panel of material, study of which shows that three geographical races of this shrike should be recognised. For the loan of material I am grateful to the Directors of the South African Museum, Cape Town (through Dr. J. M. Winterbottom), East London Museum, Kaffrarian Museum, King William's Town, Transvaal Museum, Pretoria (through Mr. O. P. M. Prozesky), and the American Museum of Natural History, New York, U.S.A. (through Drs. Dean Amadon and Charles Vaurie). Critical study of the assembled series reveals the geographical variation in the shrike species *T. zeylonus* to be simple and clinal in nature. The character-gradients of both the dorsal and ventral colour characters are stepped, permitting the formal recognition of three stable races, the nomenclature, characters and ranges of which are as hereunder given:

(*a*) *Telophorus zeylonus zeylonus* (Linnaeus).

Turdus zeylonus Linnaeus, *Systema Naturae*, 12th edition, i, 1766, p. 297: Cape of Good Hope, *i.e.*, Cape Province, South Africa. Here restricted to Cape Town.

Head-top and nape in freshly moulted dress about Dark Grayish Olive (*vide* Ridgway[2], (pl. xlvi)), the former surface often with an admixture of olive green; mantle, rump and upper tail-coverts Serpentine/Roman Green (pl. xvi). Under-parts: throat Lemon Chrome (pl. iv), torque glossy black; lower breast and abdominal surface Lemon Chrome with a variable overlay of Light Cadmium (pl. iv), or Aniline Yellow (pl. iv) in some. Sides of breast, body-sides and flanks with wash of green or greenish grey.

Measurements: Wings (flattened) of 12 ♂♂ 96–101.5 (98.7), 12 ♀♀ 92–101 (97.8) mm.

Material examined: 72. South-western Cape Province (16). Central, southern and eastern Cape Province (33). Northern Cape (4). Orange Free State (3). Basutoland (4). Transvaal (5). Natal (7).

Type: None in existence.

Range: South-western Cape Province and southern Little Namaqualand, eastwards through the southern and interior districts to the eastern Cape, East Griqualand and Pondoland, and in Griqualand West (northern Cape), Orange Free State, Basutoland, Transvaal highveld, Natal (uncommon on coast) and western Swaziland.

(*b*) *Telophorus zeylonus thermophilus*, subsp. nov.

Type: ♀, adult. Windhoek, Damaraland, South-West Africa. 5th May, 1918. Collected by the late Lt. C. G. Finch-Davies. In the collection of the Transvaal Museum, Pretoria. T.M. No. 12371.

Diagnosis: Similar to *T. z. zeylonus* as defined above but head-top and nape markedly paler (about Light Grayish Olive (pl. xlvi)); mantle, rump and upper tail-coverts lighter (about Mignonette Green (pl. xxxi), and with a distinct overlay of greyish olive to the mantle in freshly moulted dress. On under-parts rather paler, the lower breast and abdominal surface about Empire Yellow (pl. iv), and without a wash of green or greenish grey to the sides of the breast, body-sides and flanks (the latter greyish or buffish white). Black torque rather smaller. Wings and tail paler. Averaging a trifle smaller, especially the female.

Measurements: Wings of 10 ♂♂ 92.5–101.5 (97.2). 8 ♀♀ 89–99.5 (94.3) mm.

Material examined: 23. South-West Africa (7). North-western and western Cape Province (14). Orange Free State (1). Transvaal (1).

Measurements of the Type: Wing 95.5, culmen from base 27.5, tarsus 31, tail 97 mm.

Range: North-western Cape Province (northern Little Namaqualand, Richtersveld, Bushmanland and northern Kenhardt), western and northern districts of the northern Cape (east to about the Vaal and Hartz Rivers), western Transvaal, southern Bechuanaland Protectorate and South-West Africa (except Kaokoveld). Once from Modder River, Orange Free State (migrant?). Intergrades to the south of its stated range with *T. z. zeylonus.*

Remarks: The name is descriptive of its fondness for the hot, scrub covered hillsides bordering the edge of the almost rainless Namib Desert in South-West Africa, in which terrain I found it common during my visit to the territory in May, 1949.

(*c*) *Telophorus zeylonus phanus* (Hartert).

Pelicinius zeylonus phanus Hartert, *Novitates Zoologicae*, vol. xxvii, 1920, p. 451: Farta Bay, south of Benguela Town, Benguela, south-western Angola.

Similar to *T. z. thermophilus* on the upper-parts, wings and tail, but averaging still paler. On the under-parts, clearer Lemon Yellow (pl. iv) over the throat, lower breast and abdominal surface (The lower breast and abdominal surface are pure Lemon Yellow, as against Empire Yellow in *T. z. thermophilus* and Lemon Chrome with overlays of Light Cadmium or Aniline Yellow in *T. z. zeylonus*). Sides of body and flanks chalky white. Similar in size, but with a slightly heavier bill (up to 30 mm.)

Measurements: Wings of 2 ♂♂, 1 ♀ 97.5–100.5 mm.

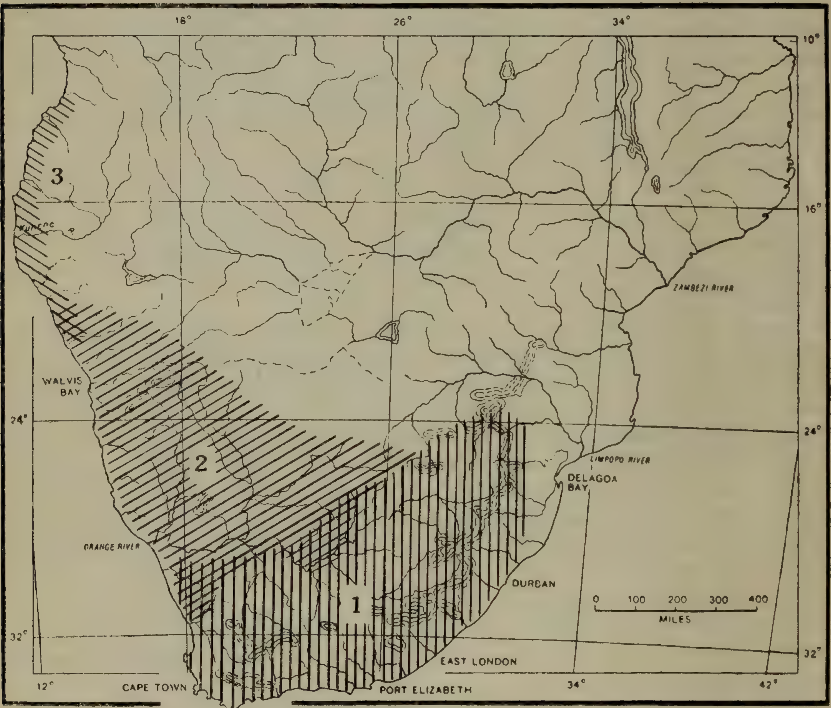
Material examined: 3. South-western Angola (3). All paratypes.

Type: In the American Museum of Natural History, New York, U.S.A. (ex Tring Museum collection).

Range: Arid coastal strip of south-western Angola (Benguela and Moçamedes), southwards to the western Kaokoveld, north-western South-West Africa (Orupembe).

Remarks: The extension of the range of *T. z. phanus* south to the western Kaokoveld rests on the single partially moulted specimen from Orupembe identified by Macdonald and Hall[3], (1957). I have not been able to examine the specimen in question, and Mr. O. P. M. Prozesky, Ornithologist of the Transvaal Museum, informs me that it is not in their collection.

Literature cited.
[1] Hartert, E *Novitates Zoologicae*, vol. xxvii, 1920, p. 451.
[2] Ridgway, R. *Color Standards and Color Nomenclature*, 1912.
[3] Macdonald, J. D., & Hall, B. P. *Annals of the Transvaal Museum*, vol. xxiii, 1., 1957, pp 31–32.


18°
26°
34°
10°
16°
24°
32°
12°
34°
42°
3
2
1
ZAMBEZI RIVER
WALVIS BAY
LIMPOPO RIVER
DELAGOA BAY
ORANGE RIVER
DURBAN
0 100 200 300 400
MILES
EAST LONDON
CAPE TOWN
PORT ELIZABETH

Telophorus zeylonus (Linnaeus).

Sketch-map showing the approximate ranges of the three races of *Telophorus zeylonus* (Linnaeus).
1. *Telophorus zeylonus zeylonus* (Linnaeus).
2. *Telophorus zeylonus thermophilus* Clancey.
3. *Telophorus zeylonus phanus* (Hartert).

The grassland species of the genus Cisticola

by Mr. C. M. N. White

Received 21st March, 1960

The term "grassland species" is a handy means of referring to a group of small species of *Cisticola* characterised by their dark streaked uppersides. They are also associated with more open country than the rest of the genus, especially with open grasslands and pastures, although they may also occur in cultivation (one or two of the species involved). Lynes treated them as his species 1–9 in his 1930 review and later added a tenth (*dambo*) to the assemblage.

The group presents a number of points of peculiarity which merit discussion. The only *Cisticolas* occurring outside the continental Ethiopian region are found in this group, viz. *juncidis*, *exilis*, *haesitata* and *cherina*. Of these *exilis* is unique in not occuring anywhere within the Ethiopian region. Its range is from Australia to New Britain, most of the Malay Archipelago, the Philippines, and south east Asia from China to peninsula India. *C. juncidis* also occurs in the same area though with a slightly different distribution since it extends to Japan but has only a limited foothold in Australia and does not reach New Guinea or New Britain. Since *Cisticola* is an African genus with only two species extending to the Oriental and Australasian regions, the possibility must be considered that *exilis* is a more or less close relative of *juncidis* which has twice extended its range far to the south east and east in the form of a double invasion. *C. juncidis* has what Lynes calls the tail of spotted fan pattern above and below, a character shared by *cherina* of Madagascar and *haesitata* of Socotra, both of which seem to be very closely related to *juncidis*. Most of the other species of the group have black tails, except that *aridula* and the winter plumage of *eximia* have the spotted fan pattern below. This variation in tail pattern which in the bulk of the species is a useful taxonomic character is however quite variable in *exilis*. Thus nominate *exilis* of Australia has a male breeding dress with the tail black above but of spotted fan pattern below, and a male non-breeding dress in which the tail is of spotted fan pattern above and below. Females of both sexes have the spotted fan pattern above and below in both dresses. Some other races show the spotted fan pattern in both sexes at all seasons whilst the Indian *exilis tytleri* in breeding birds of both sexes has a black tail on both sides. Lynes drew attention to the remarkable similarity between *exilis* and *eximia*, an African species found in the savannas from Sierra Leone to the southern Sudan, Uganda and north west Ethiopia. This resemblance is exceptionally close in the winter plumages overall, and the variation in whether the tail is black or partially with a spotted fan pattern is common to both. Current taxonomic treatment associates *eximia* with the other African "Cloud-scrapers" because of the high cruising flight of the breeding males, but other considerations suggest such a close relationship to *exilis*, (which is not a "Cloud-scraper") that it seems likely that the high cruising flight may have been independently developed by otherwise not closely related species. Consequently I believe that *exilis* and *eximia* might be regarded as a pair of species closely related to each other and presumably representing a stage in the evolution of the group at which the contrast between plain black and spotted fan types of tail had not yet become segregated as a specific character.

C. juncidis (with *haesitata* and *cherina*) is of interest in comparison because it is the only species in the group in which the spotted fan pattern of tail has become fully stabilised as a species character at all seasons and in both sexes both above and below. Like *exilis* it has shown great capacity to expand and it also has extended into the Mediterranean basin. Whilst the two insular forms are both well marked, they are very alike as between themselves, and it would appear a truer picture of relationship to treat them as very well marked insular races of *juncidis* rather than as distinct species. *C. juncidis* may not have developed primarily in Africa, but possibly reinvaded Africa from its European or Asiatic range, since it is peculiar among the African *Cisticolas* in showing hardly any geographical variation. Only a paler northern and darker southern subspecies are really separable (*uropygialis* and *terrestris*). Lynes also recognised *C. j. perennia* for a small area about Uganda and Kenya because most birds in this area do not show any seasonal plumage change, though he admitted that it was a poor race. To be consistant one should then probably recognise the more north western populations of *terrestris* which likewise often have a perennial dress as a distinct form. In fact these variations in incidence of seasonal or perennial dress seem too irregular to be treated as subspecific, and it would be preferable to refer to the tendency to perennial dress in equatorial areas but not to recognise *perennia* as a separate subspecies.

Thus far then I would place *exilis*, *eximia* and *juncidis* as three closely related species. Closely related to *juncidis* is *C. aridula* which is confined to the mainland of Africa and has the tail dark above, but with the spotted fan pattern below. It occurs in much dryer areas as a rule than *juncidis* and consequently often in conditions more properly described as grassy steppes. Its pale colour is no doubt a reflection of its association with dry conditions, but some races occuring in grasslands with a high rainfall are heavily streaked with black above (*e.g. aridula perplexa* in Northern Rhodesia). Whilst in some places *aridula* and *juncidis* occur together (*e.g.* Southern Rhodesia) there are other dry areas such as much of South West Africa and Somaliland where *aridula* seems to have wholly replaced *juncidis. C. aridula* is also of interest because it exhibits imperfectly developed ''cloud-scraping'' habits. On the facts thus far considered *aridula* might be also included in the same group as the three previously discussed species. However it also shows signs of being a link to another, less obviously nearly related species, *C. textrix*.

C. textrix is one of the black tailed Cisticolas; it is a ''cloud-scraper'' in habit and lives on short grass pastures of generally dry character. Its distribution is most peculiar since it occurs in the south and east of the Union of South Africa and reappears with little geographical variation on the central plateau of Angola east to the Balovale and Kabompo districts of Northern Rhodesia. The intervening country in Southern and Northern Rhodesia and Bechuanaland is sufficiently well worked to make it certain that these widely separated populations are not in any way linked. The intervening area wherever suitable environment exists is occupied by *aridula*, and although *textrix* and *aridula* seem to overlap slightly in the Transvaal and near Vila Luso in Angola, there is little doubt that in general they are allopatric. In Northern Rhodesia where both live in the same districts in the north west, the rather limited field date available suggests that they are not found living actually side by side. The distribution of *textrix* outlined above makes it almost certain that there must have originally been a continuous distribution and it is likely that *textrix* has been ousted by *aridula. Textrix* and *aridula* would then seem to be more nearly related than has sometimes been supposed.

The next species *C. brunnescens*, another black tailed ''cloud-scraper'' seems to me to be much further removed from all the preceding forms than any of them are from each other. It inhabits moist grasslands from Ethiopia through East and Central Africa to Natal with two outlying populations on the middle Congo at Bolobo and in the Bamenda highlands of the Cameroons. These last two outlying races are the main distributional peculiarity of the species; the problem of how they have come to be where they are will be repeated again for an allied species, *ayresii.*

C. dambo has a very restricted range in the Kasai south to the Katanga and the north west Mwinilunga district of Northern Rhodesia. Its general characters suggest close relationship to *brunnescens* both in appearance and in habits and habitat. The final species of the group *ayresil* is small with a rather short black tail and very short and acute first primary. Since *textrix* has a similarly peculiar first primary, but in other respects is not closely related to *ayresii*, the shape of the first primary is probably not very significant.

Ayresii in general frequents dryer grasslands than *brunnescens*, but not arid areas. From the Cape Province to Southern Rhodesia it has a wide and fairly continuous distribution occuring from sea level in the Cape to areas over 4,000 feet in Southern Rhodesia. Further north and west occur only island populations on high grasslands (Nyika over 7,000 ft.; Mwinilunga, 4,500 ft. and high plateaus in the Katanga and central Angola). None of these isolated populations seem to differ from the South African birds. Yet in East Africa several distinct forms occur comparatively near to each other viz. *mauensis* in the Kenya highlands between 8,000 and 12,000 ft. and *entebbe* in the area of lake Victoria and the adjacent edge of the Belgian Congo, *imatong* on the Imatong Mts. at high levels and *itombwensis* in the highlands north west of lake Tanganyika and west of the Ruzizi valley. But it is not restricted to such high plateau or montane grasslands in the tropics for isolated colonies of another distinct form occur on the Gabun coast at Port Gentil, at lake Ogemwe in the Gaboon and at Kunungu on the middle Congo. As with *brunnescens* the dispersal of these outlying pockets poses a problem which cannot be answered, as does also the fact that in some areas outlying populations of ayresüi show marked subspeciation, in others none that can be detected.

The last three species *brunnescens*, *dambo* and *ayresii* seem to be a more or less closely related group standing apart from the other grassland *Cisticolas* in their general characters, and whilst the remaining species seem to form a group within which links can be postulated or demonstrated between one species and another, no such links are obvious between that group and the *brunnescens* group. Ethological characters such as "cloud-scraping" do not seem to be a sound basis for dividing up the species since this characteristic cuts across other features. In so far as the African species are concerned I would suggest that the first group of *juncidis* and allies are in varying degrees associated with drier types of grassland and environment, and the second group of *brunnescens* are associated with moister environments, though the distinction is not absolute.

Within Africa the general distribution of species suggests that a broad distinction may be drawn between highly successful, abundant and widely spread species, and others which exhibit a relict character with limited or patchy distributions. In the first group *juncidis* typifying country with rather a wide variety of biotops, and *aridula* in dryer areas might be termed markedly successful species. *Textrix* on the other hand has a "relict" type of distribution, and the close relationship of *eximia* to *exilis* suggests that *eximia* may be a relict of a bird once stretching from Africa to Australia as *juncidis* does today.

The second group includes one abundant and successful bird *brunnescens*, although it is interesting that apart from the Bamenda race, it has not colonised West Africa. At the opposite extreme *dambo* has a relict type of distribution. *Ayresii* appears to fall between the two, but north of the Zambezi much of its distribution consists of isolates showing little or no marked geographical variation except in East Africa. Since there is no reason to suppose recent colonisation of the various Central African localities which now form isolates they may in fact be relicts of a once wider and more continuous range.

Notes on some Savanna Species of the Genus Cisticola

by MR. C. M. N. WHITE

Received 28th March, 1960

The species of *Cisticola* dealt with in the present note may be defined as medium sized species inhabiting various types of woodland or savanna including forest edges, and occasionally forest clearings. Most of them exhibit a reddish cap, often in marked contrast to the back, occasionally with little contrast. The notes are supplementary to Lynes review of 1930.

1. The *subruficapilla* group. Lynes' nos. 10–13 to which must be added the subsequently described *C. njombe*. In this group the relationship between the south western *subruficapilla* and the eastern *lais* appears to be much closer than Lynes at first allowed, and the two species are best regarded as a species pair forming a single superspecies. Lynes (Ostrich. 1935. 73–88) subsequently discussed further the situation where the two overlap in a limited area of the south Cape Province, the two in this area converging in form and colour so completely that skins cannot always be distinguished and assigned with certainty to one or other species. Although the type of *lais maculata* was supposed to have come from the Berg river, it appears from the Check List of Birds of the S.W. Cape (1955) that there is no further evidence of its occurance there. *C. distincta* was treated by Lynes as a distinct species allied to *lais*, and Vincent later (Ibis. 1947. p. 650) reported that field knowledge of *distincta* convinced him that it is a form of *lais*. Benson however who has field knowledge of both *lais* and *distincta* assures me that no such resemblance is apparent to him. I am loath to admit *distincta* as a full species, and it seems best to leave it provisionally as a race of *lais*. It would be desirable to see whether the gap between the northern limit of *lais semifasciata* and *distincta* can be further narrowed geographically. Since Lynes' review, a further related species *C. njombe* has come to light in East Africa. Lynes originally associated it with *aberrans*, Benson later thought birds from the Nyika were a race of *lais* until he discovered that both are sympatric there. The two overlap on the Nyika at 7,000 ft. and over, *lais* being especially associated with short grasslands and *njombe* with bracken-briar. The close relationship of the two suggests a double invasion of *lais* stock into these East African highlands, the second arrival occuring after *njombe* had reached specific distinctness. It has been suggested that *njombe* might be separable into two forms, the more southern *mariae* being slightly darker, but the differences seem very ill defined and probably due to wear, a view also confirmed by Mrs. Hall (in litt.)

2. *C. chiniana.* Lynes no. 14 to which must be added *fortis* (no. 20) subsequently shown to be conspecific. When Lynes wrote the concept of clines had not been developed in taxonomy, otherwise Lynes would doubtless have used it in dealing with this species in which variation is so markedly clinal that many subspecies are very ill defined entities. One such sequence of clinal variation covers most of the south eastern and eastern populations. The dark *campestris* of Natal is rather poorly differentiated from many Southern Rhodesian *chiniana* and the latter cannot be distinguished as an aggregate from birds from north of the Zambezi from Mazabuka and Namwala to Lusaka although the latter are clearly paler than typical *campestris*. No more than these two names can be usefully applied to this cline. The situation further east (*procera-emendata*) I have discussed in an earlier note. It seems undesirable to divide up this unit. This cline ends in coastal East Africa with *heterophrys* which again seems to differ from breeding *procera* (as now understood) merely by its perennial dress and more buffy, less greyish white underside.

A second clinal sequence not as yet known to intergrade with the foregoing occurs in interior East Africa comprising Lynes' *fischeri*, *humilis*, *victoria* and *ukamba*. In this sequence *victoria* is a pure intergrade between *fischeri* and *humilis* and in modern nomenclature would be far better dropped as a separate subspecies. I would include it with *fischeri*.

Nothing seems to be known of *chiniana* in south west Tanganyika and there is an important gap to fill here to show how *fortis*, *fischeri* and *procera* meet and whether there is intergradation.*

3. The *lateralis* group. I include in this group Lynes' nos. 15–17 and 19 (*lateralis*, *woosnami*, *anonyma* and *bulliens*). The characters of the first three of these species strongly suggests that they originated from a common stock through geographical and ecological isolation. *Lateralis* and *woosnami* respectively are characteristic of the West African savannas and of the East and Central African savannas. Where the two meet in Uganda there is some overlap but the evidence suggests some ecological separation, *lateralis* preferring the proximity of forest edges. In the south west where their ranges meet in the north west of Mwinilunga, Northern Rhodesia there is very little overlap, *woosnami* being common there and *lateralis* very uncommon. *C. anonyma* is unique among the *Cisticolas* in its association with evergreen forest clearings and edges. The affinities of *bulliens* are less clear and may be with *chiniana* which seems to be absent form the coastal areas of Angola inhabited by *bulliens*. But the latter also extends into localities inland in north Angola where *chiniana fortis* might be expected. *Lateralis* and *woosnami* are the only members of this group showing any geographical variation, and in both it is rather slight. I cannot confirm any differences between *w. woosnami* and *w. schusteri*, and Mrs. Hall (in litt.) tells me that she cannot see the differences claimed by Grant and Praed which seem to be due to wear.

4. The black lored group, Lynes' nos. 21–24. Lynes placed these montane birds as four species, but they form a closely knit group of species on the East African and Cameroon mountains, and from the analogy of other montane bulbuls, thrushes, etc., with a similar islanded

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* *C. c. fortis* occurs at rukwa; one specimen examined since writing this note.

distribution it would be illogical not to treat them as conspecific. The ranges of *chubbi* and *hunteri* seem to approach each other ıather closely in the western Kenya highlands with *hunteri* occuring at higher altitudes. The variation in *hunteri* and its allies has been the subject of different interpretations (Lynes as amended in Moreau, (1939) and Rand (1949)).

The altitudinal variation with darker birds at higher levels has been documented by all these authors. Not only does this tend to cut across horizontal geographical variation, but makes the recognition of an Elgon form *masaba* rather unsatisfactory since the name is applied to dark high altitude birds but founded on a bird from a lower level where the population is more like *prinioides*. In view of the difficulties of expressing these variations in conventional taxonomy, I believe that no races of *hunteri* (in the old sense of the name as a species) should be given separate recognition.

5. *C. emini* (Lynes no. 18) and *aberrans* (Lynes no. 40). Lynes placed these two birds far apart from each other, no doubt partly influenced by the fact that *emini* as he knew it was a bird of bare rocks with stunted bushes and *aberrans* a bird of thick scrub and grass especially near to the foots of hills. Benson on the other hand has found a very close resemblance in the field between *emini lurio* and *aberrans* in Nyasaland where the two are allopatric, both being associated with *Brachystegia. Emini lurio* is associated with rocks in such woodland, *aberrans* not necessarily so. *Emini* as understood in the past is a plain backed bird and *aberrans* a mottled backed bird. But *lurio* shows some mottling above. In view of the fact that *lurio* seems to provide a link between *emini* and *aberrans*, in view of their allopatric distribution in Nyasaland and especially in view of Benson's opinion based on good field knowledge of both in Nyasaland, I propose that *emini* and races should be made conspecific with *aberrans*. The fact that the ecological requirements of the various forms is somewhat variable should not be regarded as a barrier to this. North of Nyasaland the species appears to be very much of a relict with rather widely scattered populations extending to the Sudan and French Sudan. This is a phenomenon which is found in several species of Cisticola.

Further notes on some species of the Genus Cisticola

by Mr. C. M. N. White

Received 28th March, 1960

1. *The swamp species*. Lynes (1930) recognised *galactotes*, *pipiens* and *carruthersi* as forming a distinct group of swamp dwelling species of *Cisticola* (nos. 27–29 of his review) but for reasons which seem rather unconvincing placed *tinniens* far away from them as no. 39. In fact *tinniens* is very closely related to the other swamp species and should certainly be placed in the same group. *C. galactotes* is one of the few very widely ranging species of the genus which exhibit clinal variation which makes the definition of subspecies difficult, and Lynes seems to the writer to have over estimated the degree of well defined variation. In particular I find that the plumage in *galactotes* especially in non breeding dress is subject to very rapid fading long before much wear is apparent.

On the south and east sides of the range it is easy to distinguish two extremes in the larger and darker nominate form and the smaller and paler *haematocephala* of coastal east Africa, but any additional forms between them hardly seem constant enough or sufficiently clear cut for separate designation. Lynes described *luapula* in 1933 for one of these intermediates, but I cannot see any constant difference between it and typical *galactotes* unless the non breeding dress is rather richer red above when extremely fresh. Unless this is confirmed by equally fresh *galactotes*, *luapula* should be united with the latter. Further north *suahalica* appears to be composed of various intergrading populations linking *haematocephala* and *galactotes* and the birds of Uganda. Since in general it exhibits the paler colour of *haematocephala*, I prefer to include it under that form.

The West African form *amphilects* likewise seems to present clinal variation in the east of its range and these eastern populations separated by Lynes as *nyansae* appear to be intergrades with the Ethiopian form, assuming a non breeding dress like that of the latter in Kenya. In breeding dress the differences between*a mphilecta* and *nyansae* seem as much individual as geographical over the whole of the Congo basin. Consequently I believe that it would be better to treat *amphilecta* and *nyansae* as a single taxonomic unit with intergrading populations in the east of its range. One might expect to find *amphilecta* extending south in the west to meet *galactotes* but there still seem to be no records of the species in the south western Katanga or in Angola. However in the north west of northern Rhodesia a large dark form, *schoutedeni* White occurs with wings in males 63–68 mm. against 57–64 mm. in *galactotes* and 60–66 mm. in *amphilecta.*

Despite the absence of *galactotes* from Angola it is not possible to regard *pipiens* as replacing it there, for the two species live together over a wide area of Northern Rhodesia, and despite difficulties which have arisen in the past in distinguishing them in museums, they are strikingly unlike each other in life.

2. *Cisticola natalensis.* Variation in this species is essentially clinal, and although some peripheral populations form quite well defined subspecies, separation of subspecies over most of the area is difficult. As in some other species, birds from equatorial regions tend to assume a perennial dress, but the mere failure to have a breeding and non-breeding alternation of dress especially as it is irregular rather than stable seems to me insufficient ground for distinguishing subspecies unless accompanied by other differences in colour. The southern and eastern nominate form and the western *strangei* differ by little more than the smaller size and slightly less heavy streaking of *strangei.* The area ascribed by Lynes to *valida* seems to be occupied by a mass of variable and irregular plumaged populations better not designated by separate subspecific names. I place *valida* as a synonym of *strangei* and *littoralis* as a synonym of *natalensis.* Lynes was impressed by the fact that the form of central Kenya, *kapitensis*, which has a perennial dress half way between winter and summer *natalensis* is isolated from "valida" by the absence of the species in west Kenya. Nevertheless in the "valida" populations about 32% according to Lynes exhibit half way dresses either like those of *kapitensis* or slightly darker. Thus either the half way dress of *kapitensis* is not of great genetic significance or else it is possible that some gene flow does in fact take place

and *kapitensis* is less isolated on its western side than has been supposed. In view of the irregularity of moults in Cisticola species in this area I suspect that the former may be the true reason, and that this reinforces the view that such variability in moults should in general not be regarded as evidence of subspecific variation until much more is known as to how these variations in moults are controlled.

The Somali forms of *Calandrella rufescens*

by MR. C. M. N. WHITE

Received 2nd May, 1960

In 1954 Mr. J. G. Williams collected two forms of *Calandrella rufescens* in British Somaliland—one a pale greyish sandy form corresponding to the descriptions of *C. r. somalica*, and the other a bright vinous race which appeared to be undescribed and which in Bull. B.O.C. 1955, p. 3 I named *C. r. vulpecula.* Recently whilst completing a review of the African larks, it occurred to me that the type locality of *C. r. somalica* is the Haud and therefore near to the locality whence *vulpecula* was found. I examined the type in the British Museum (Nat. Hist.) which is a specimen in moult. The new feathers are quite vinous like those of *vulpecula*, and it is clear that the latter is a synonym of *somalica.* The name *somalica* has since its introduction being constantly misapplied to a quite different greyish sandy race. I therefore describe:—

Calandrella rufescens perconfusa subsp. nov.

Description: nearest to *C. r. megaensis* of south Ethiopia but upper side much paler, the feather edges a slightly greyish sandy and the dark centres less pronounced and more greyish; below with less reddish brown wash on breast and flanks. Much lighter than *C. r. athensis* and lacking the red vinous colour of *C. r. somalica.*

Type: in my collection, Male collected at Borama, British Somaliland by Mr. J. G. Williams on 18.2.1954.

Distribution: the central and western plateau of British Somaliland.

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Notices

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DINNERS AND MEETINGS FOR 1960

18th October, 15th November and 20th December.

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If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

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Edited by
DR. JEFFERY HARRISON

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BULLETIN

OF THE

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Special General Meeting

A Special General Meeting of the British Ornithologist's Club was held at the Rembrandt Hotel, S.W.7, at 5.30 p.m. on Tuesday, 20th September, 1960. Captain C. R. S. Pitman took the Chair and there were eleven members present.

The purpose of the meeting was to elect a new Honorary Secretary and to make alterations to the Rules, consequent on the proposals that had been made for closer co-operation between the Club and the Union. These proposals were that no further election of Associate Members should be made; that members of the Union, who were not members of the Club should be given some opportunities to attend Club meetings: that the Entrance Fee should be abolished.

1. The Committee recommended that Miss E. Forster should be elected Honorary Secretary in place of Mrs. B. P. Hall who had been acting temporarily, but that Mrs. Hall should continue to be responsible for programmes. This was proposed by Miss E. P. Leach, seconded by Mrs. Boyd Watt, and carried unanimously.

2. The Committee recommended the following alterations to the Rules:—

Rule 4. Delete existing Rule 4 and substitute:

> "4. Any member of the British Ornithologists' Union may become a member of the Club on payment to the Treasurer of a subscription of £1 1*s*. 0*d*. per annum. A member who ceases to be a member of the British Ornithologists' Union shall also cease to be a member of the Club.
>
> Associate Members enrolled under the Rule 4 hereby revoked shall retain all privileges as therein defined but no further Associate Members shall be admitted."

Proposed by Dr. W. H. Thorpe, seconded by Mr. C. N. Walter and carried unanimously.

Rule 5. Delete existing Rule 5 and substitute:

> "5. Members of the British Ornithologists' Union who are ordinarily resident outside the British Isles, and ornithologists from the British Commonwealth, or from foreign countries, may be admitted at the discretion of any member of the

committee as Temporary Associates (Overseas) of the Club for the duration of any visit to the British Isles not exceeding one year. Privileges of Temporary Associates (Overseas) shall be limited to attendance at the ordinary meetings of the Club and the introduction of guests.

Members of the British Ornithologists' Union ordinarily resident in the British Isles, may be admitted at the discretion of the Honorary Secretary as Temporary Associates (Home) to any one meeting during the Winter Session of the Club."

A suggestion made by Mr. E. Cohen (by letter) that the popular Christmas meeting should be excluded from the privileges granted to Home members of the Union was not supported, as it was felt that the "discretion of the Honorary Secretary" covered any contingency that might arise if the numbers became unwieldy. The new Rule was then proposed by Dr. J. G. Harrison, seconded by Mrs. Bradley, and carried unanimously.

Rule 9. After the word "members" in line 1 insert "and Temporary Associates (Overseas)".

After the word "guest" in line 2 insert "except for husbands and wives of members".

Proposed by Mr. C. N. Walter, seconded by Mr. R. S. R. Fitter and carried unanimously.

The meeting was then adjourned.

The October meeting of the Club was held jointly with the B.O.U. on Tuesday, 18th October, 1960.

Signal plumage and phylogenic relationship in some Doves

by Mr. C. J. O. Harrison

Received 9th April, 1960

Summary

Many species of dove possess chestnut colouration on the primary feathers which is visible when they fly. This characteristic is found in widely dispersed genera and, within these genera, it may be present in some species and not in others. It is found in an Oriental-Australasian genus, and in some Australia, some Ethiopian, and some Neotropical genera.

It appears to function as a flying-up signal, but does not seem to be related to one particular type of habitat. It may have specific recognition value.

Iridescent plumage is found on the wing-coverts of most of the species and in related species which lack the chestnut colouring.

It is suggested that these birds may have evolved from a common ancestral stock; and show dispersal of a type which suggests that their origin, within the Columbidae, is an early one. There appears to have been adaptive radiation in the areas where the doves are now present. Some other genera in the Australasian, Nearctic and Neotropical regions may be related to this group although the characteristics are not so apparent in them.

The apparent relationship of these genera was recognised by Salvadori in his classification of the columbidae.

Chestnut Colouration on Primaries.

Many of the smaller doves in various parts of the world, reveal, when they fly, a bright chestnut colouration in the primary feathers. A closer examination reveals that the disposition of the pigment on the individual feathers is similar in most of these species. The majority of the broad inner web of each primary is chestnut in colour, but the tip of the feather and most of the narrow outer web are darker in colour, usually brown or grey. The extent of each colour can be seen in Figs. 1 and 2.

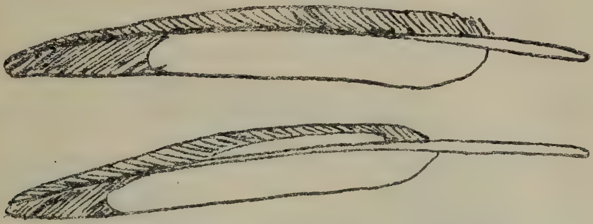

Fig. 1 Primary feathers of *Geopelia cuneata* showing chestnut colouration (not shaded).

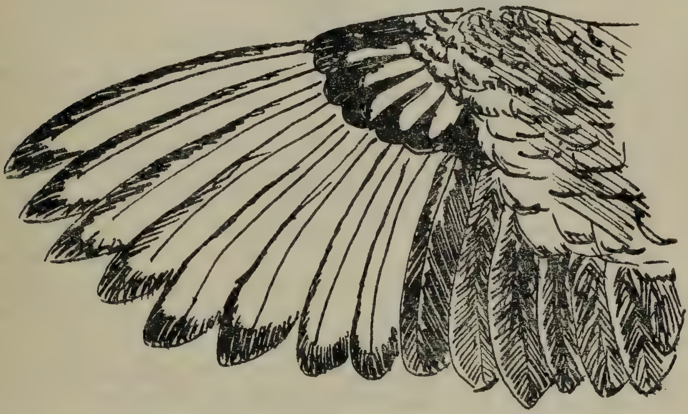

Fig. 2 Wing of *Scardafella squammata* showing extent of chestnut colour on primaries and primary coverts.

Within the *Columbidae* this characteristic shows a wide but discontinuous distribution. It is found in one genus of two species with Oriental-Australia distribution, in a number of Australian species, in some Ethiopian species, and in some Neotropical birds. It is inconsistant; being present in one species and absent in another of the same genus, and in some species its presence varies from one subspecies to another.

It is present in the two closely related species of Green-winged Dove, *Chacophaps indica* and *C. stephani*, of Oriental-Australian distribution.

In Australia it is found in *Lophpohaps plumifera* and *L. ferruginea*. It is present in *Petrophassa rufipennis* (Fig. 3) but in the closely related *P. albipennis* the pigment is absent and this portion of the primary feathers is white. *Phaps elegans* shows it, but in *Phaps chalcoptera* it is reduced in area. *Histriophaps histrionica* also shows a reduced area of chestnut colouration. *Geopelia humeralis* and *G. cuneata* both have it but there are some interesting variations in its distribution in the subspecies of *G. striata*. The latter species appears to be of Australian origin but is widely distributed over the Oriental region, a distribution which is partly attributed to human agency. *G. striata mangeus* has almost the full amount

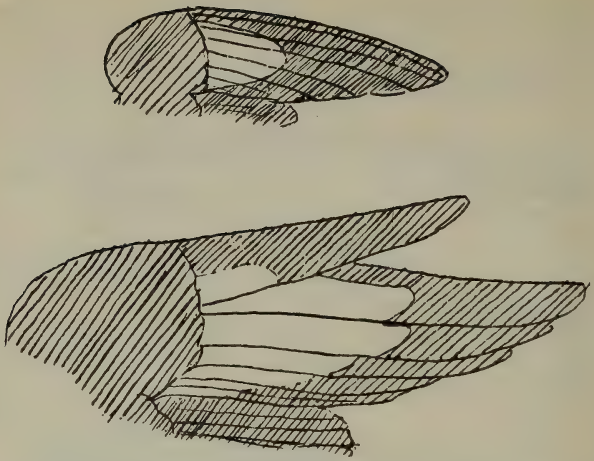

Fig. 3 Underside of wings showing reduced chestnut colouration. (top) *Metriopelia aymara.* (bottom) *Petrophassa rufipennis.*

of chestnut colour, while *G. s. striata* shows it reduced to a trace on the edge of the primaries and *G. s. placidus* shows none. There is a noticeable amount of white on the inner web of the primaries of the last species, although this is not so clearly demarcated and obviously homologous with the chestnut colouration as it is in the case of *Petrophassa albipennis.*

In Africa the chestnut colouration is found in a number of small doves—*Oena capensis*, *Tutrur tympanistria*, *T. afra*, *T. abyssinica*, *T. chalcospilos*, and *T. brehmari.*

In America the species concerned are mostly neotropical, but two species, *Scardafella inca* and *Columbina passerina* extend into the southern parts of North America. The chestnut colouration is found in *Scardafella inca* and *S. squammata.* It is present in *Columbina passerina* and in *C. talpacoti rufipennis*, but absent in *C. t. talpacoti. Metriopelia aymara* is peculiar in that it shows a small and distinct area of chestnut towards the base of the primaries (Fig. 3), while there is none in the other species of *Metriopelia.*

The Function of the Colour.

It is difficult to assign an immediate and obvious function to this colouration. The disposition of the colour on the primary feathers is such that it is not normally visible when the wing is closed. It appears as a sudden patch of colour when the bird flies, and this effect is heightened in some species by the presence of more extensive chestnut colouration on other parts of the underwing, or by contrasting areas of black or white on the upper or lower surface of the wing bordering the primaries. Such colouring obviously has some signal or startle function.

Unlike other conspicuously coloured parts of the plumage it does not appear to play an obvious part in epigamic displays. There are not many common factors of behaviour that link all the birds that have it. Some are found in dense forest, some in scrub, and some in open country; some tend to stay in the open, and some to haunt thick cover. However, all are seed eaters and feed mainly on the ground, and it seems likely that this colouration functions as a flying-up signal which alerts other members of a group if one takes fright.

It may also assist specific recognition, in species such as the two similar species of *Petrophassa*, where the colour is different; and the two relatively similar species of *Phaps* where the extent of colour differs. These are, however, normally allopatric, and a more likely example is seen in the case of *Geopelia striata*. In this species the chestnut colour is absent in the one subspecies, *G. s. placidus*, which is sympatric with a similar but smaller species, *G. cuneata*, in which the chestnut colour is present. Although the two are quite distinct and easily recognisable species the potential need for this difference is borne out by the existence of at least one wild hybrid between the two species which was originally described by Ogilvie-Grant (1909) as a new species, *G. shortridgei*.

Even if we accept the suggested functions of this colouring it does not explain either its absence in related species or its existence in species belonging to widely scattered genera which do not appear to be related. Its irregular occurrence suggests that it may form some common link between the various species that possess it, and that it is probably part of their genetic inheritance, its presence indicating some ancestral relationship between the birds concerned.

This idea is reinforced if other signal elements in the plumage are considered.

Iridescent Plumage.

The most obvious feature of the plumage of *Chalcophaps* is that the wing-coverts and secondaries show a metallic green-bronze iridescence, forming a striking patch of colour. There are also the addition signal characteristics of a distinct pale forehead and transverse bars of dark and light colour on the lower back and rump.

In the Australian doves similar metallic iridescent feathers are found, most extensively on the wings of *Phaps chalcoptera*, but also on the greater coverts and secondaries of a number of other species that constitute the "Bronze-winged Doves". There are some species which possess these feathers but lack any chestnut colour on the primaries; but since the latter may be absent in obviously related species or subspecies the lack of it does not imply the absence of relationship.

In these doves the iridescent colouring may be gold, green, or purple, and it tends to be limited to a portion of the feather, often being bordered by non-iridescent grey or brown.

Iridescent feathers are present on *Phaps chalcoptera*, *P. elegens*, *Ocyphaps lophotes*, *lophophaps plumifera*, *L. ferruginea*, *Geophaps scripta*, *G. smithiae*, *Histriophaps histrionica*. In *Petrophassa* there is a vestigial iridescent spot concealed in the secondaries. In addition to these Australian birds there are two New Guinea bronze-wings, *Henicophaps albifrons* and *H. forsteri*.

The three species of *Geopelia* do not show iridescence on the wings, but show similarity to some of the bronze-wings on the barring if the plumage; and there is evidence of other similarities of appearance and behaviour.

All the African species mentioned show some iridescence on the wing feathers, but in these birds it is confined to a few small spots on the coverts and/or secondaries. These may be green or blue but in some species they appear black unless closely examined.

The Central and South American species already mentioned as possessing chestnut coloured primaries are part of a group of seventeen species of ground dove. These were grouped into seven genera by Peters (1937), ten genera by Hellmayr and Conover (1942), and have recently been revised by Goodwin (1959) into five genera as follows:—*Columbina picui, C. passerina, C. talpacoti, C. minuta C. buckleyi, C. cruziana, C. cyanopis;*
Clavaris pretiosa, C. mondatoura, C. godefrida;
Metriopelia aymara, M. melanoptera, M. morenoi, M. ceciliae;
Uropelia campestris;
Scardafella inca, S. squammata.

Only five of these show any chestnut colouration, but all but four of them possess iridescent or black feathers on the wings and these tend to form bars of colour. Bright metallic iridescence, if it is present, is limited to a few feathers. Such markings are absent in two species, *Metriopelia melanoptera* and *M. morenoi*, while the genus *Scardafella* appears to bear the same relationship to these ground doves as does *Geopelia* to the Australian doves. There are no iridescent or black feathers in this genus but most of the feathers have a black bar at the tip. There is a faint indication of a similar pattern in *Columbina passerina.*

It seems possible that *Zenaida* and *Ectopistes*, both of which have (or had) dark spots on the wings, represent a radiation from this group.

Geographical Distribution.

There are, then, three groups of doves, one in Central and South America, one in Africa, and one in Australia, with a linking genus in the Oriental and Australian regions. All have characteristics which might indicate a common origin. The type of distribution that they show is one which is regarded as indicating an early origin.

Darlington (1957), in his recent work on zoogeography, has shown that there is evidence in many of the vertebrates for a common pattern of dispersal in dominant groups. It is suggested that the point of origin was in the Old World tropical region, with dispersal occurring on three routes —through Africa, through the Oriental region to Australia, and through North Temperate Eurasia and North America to South America. The tendency for replacement by new groups from the centre of origin would cause the earlier dispersal to result in relict groups or species towards the extreme ends of those reutes. The distribution of the three main bronze-wing groups could be explained on this basis.

Darlington has been reluctant to draw conclusions from the present-day distribution of birds since adequate fossil records are lacking. He does show that in the case of the parrots the only fossil relics are in the North Temperate regions, while the present-day parrots are distributed through the main tropical regions but reach their greatest diversity in Australia and South America. He has pointed out that the *Columbidae* show a comparable distribution; but I think that the pattern has here been obscured by a tendency to regard them as a single unit.

I suggest that the Bronze-wing doves represent a distinct unit within the *Columbidae* and have at some period radiated from a point of common origin, and becoming separated, possibly because of climatic reasons such as the pleistocene glaciation, or through competition with a later group. The genus *Columba*, which is dominant in the Paleartic region and present in both the Old and New World, may represent a replacement of later origin.

If this were so then we can suggest that in Australia, where competing species were absent and adaptive radiation could occur in isolation over a long period, a large number of forms, both large and small, sufficiently different to achieve the status of almost monotypic genera, could be evolved. In Africa and America competition with later, and possibly more successful, groups of doves such as *Columba* and *Streptopelia* would tend to limit the extent to which adaptive radiation could occur.

Assuming that the bronze-winged doves had a genetic inheritance of common origin, then in species where signal markings were evolved these would have a common genetic basis and tend to be similar. One may alternatively assume that the variation shown represents a gradual loss of signal markings as increasing divergence occurred.

Possible Related Genera.

Zenaida and *Ectopistes* have already been mentioned as possible genera arising from the American bronze-wing group. There are other genera which may be related to the bronze-wing groups. The genus *Gallicolumba*, which contains a large number of species scattered over the islands of the Australasian region includes species which show some of the characteristics mentioned. *Gallicolumba jobiensis* shows a purple iridescence on the wing-coverts, and also has a pale colour on the forehead tapering away over the eye, a characteristic present in such diverse species as *Phaps elegans*, *Turtur tympanistria*, and *Scardafella squammata*. This genus might represent another divergent bronze-wing group.

I would cautiously suggest that the Crowned Pigeons of the genus *Goura*, in spite of their large size and elaborate crests, may also be related. In them the only signal marking, of those mentioned, is a purple patch on an otherwise grey wing, that could have been derived from an iridescent area. The ability to evolve a crest is already evident in several species of Australian bronze-wing.

In America the ground doves of the genus *Leptotila*, which show a conspicuous lack of signal markings, but which have chestnut underwings and pale foreheads, may be another aberrant bronze-wing group, having affinities with the other American bronze-wings.

Classification.

Salvadori (1893) recognised the existence of these bronze-winged dove groups, and placed them in a separate family, the Peristeridae. Within this family the Australasian, African, and Asian Bronze-wings were put in the subfamily Phabinae, but the American doves of the genera *Columbula* (now *Columbina*), *Chamaepelia* (*Columbina*), *Uropelia*, *Oxypelia*, and *Metriopelia*, were placed in a separate subfamily Peristerinae.

The more typically plumaged doves of the genera *Geopelia*, *Scardafella*, and *Gymnopelia* (now *Metriopelia*) were combined in another subfamily Geopeliinae; while a fourth subfamily, Geotrygoninae, contained such genera as *Geotrygon*, *Leptotila*, and *Aplopelia*, etc.

While this arrangement is not wholly in accord with what has been suggested concerning these species it is of value in that it gives some indication of the relationship which appears to exist between them.

Peters (1937), however, did not recognise either the family or subfamilies and lumped all the existing doves in the family Columbidae, with two large subfamilies, Columbinae (including the bronze-wings with other typical doves), and Treroninae (the fruit pigeons). In addition there were two monogeneric subfamilies of Gourinae and Didunculinae.

I would suggest that this latter arrangement is unsatisfactory in that it fails to indicate where relationships exist between one genus and another.

List of Genera

Asia and Australasia:— Chalcophaps, Phaps, Ocyphaps, Lophophaps, *Geophaps*, *Histriophaps*, *Petrophassa*, *Geopelia*, *Henicophaps*, (*Leucosarcia*).

Possibly related genera:— *Goura*, *Microgoura*, *Gallicolumbea*.

Africa:— *Oena*, *Turtur* (including *tympanistria*).

America:— *Columbina*, *Claveris*, *Matriopelia*, *Uropelia*, *Scardafella*.

Possibly related genera:— *Zenaida*, *Ectopistes*, *Leptotila*.

N.B. In this paper I have followed the nomenclature of Peters (1937) except for the revision of the American doves by Goodwin (1959) and in the case of *Turtur Tympanistria*. (*T. tympanistria* of Peters).

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Acknowledgement:
I should like to thank the trustees of the British Museum (Natural History) for permission to examine specimens in the collection, and to acknowledge my debt to Mr. Derek Goodwin who, through a common interest in ethology and aviculture, has done much to widen my interest in, and knowledge of, these birds.

Remarks on the female plumages of the Tufted Duck and a comparison with the Ring-necked Duck

by Mr. E. H. Gillham

Received 7th April, 1960

In their paper (Bull. B.O.C., 80:25–28)[1] on varieties of Tufted Duck (*Aythya fuligula*), the Drs. Harrison give data on variations described as "three instances of a very unusual type". Since there is no mention how their three illustrated specimens differ from published descriptions of the female Tufted's seasonal plumages a few comments are not inappropriate.

The summer plumage of the adult female Tufted Duck.

On plate 88 of the *Handbook*[3] there is a picture of an adult female in summer plumage (middle bird top right plate) with underparts similar to the left and right hand birds pictured by the Drs. Harrison on plate 1 of their paper. Moreover, the description of the adult female in summer (page 300 of the *Handbook*) mentions—after details of upper breast, sides of body and flanks—that the rest of the underparts are sepia, feathers of breast, belly and vent more or less tipped white or yellowish white (in some intermixed with white feathers). The *winter* plumage is acquired between July and November so one would expect to see females with darkened underparts in September.

The first winter plumage of the female Tufted Duck.

On page 301 of the *Handbook* it is stated that the plumage of the first winter female can only be distinguished when some juvenile body feathers are retained. As the belly and vent of juveniles have a barred appearance the first winter female shown by the Drs. Harrison (centre of plate 1 of their paper) appears to resemble a bird still retaining some of its juvenile feathers.

Plumage comparisons between female Tufted Duck and female Ring-necked Duck (Aythya collaris).

From perusal of three female Tufted shown in the top two pictures of plate 88 of the *Handbook* it will be seen that there is (from left to right) a white bellied, a mottled bellied and a dark bellied bird (the last is described as a dark type). It is useful to compare these with Mendall's[2] illustrations of a series of female Ring-necked showing progressive plumage changes (plate 2, "*The Ring-necked Duck in the Northeast*") in which the belly of the female changes from light to dark between April and August. Thus, there appears to be a similarity in the underparts of these closely related species.

Mendall says of the Ring-necked Duck's plumage "by late May the white lower breast and belly of the female becomes extensively mottled with brown. Throughout June this mottling becomes more noticeable . . . The brown colouration of the underparts which replaces area previously white or grayish is due primarily to plumage wear rather than to the acquisition of new feathers during molt".

Conclusion.

In the late summer and autumn I have frequently seen female Tufted with mottled underparts similar to the September killed birds depicted by the Drs. Harrison in their paper but, in view of plumage descriptions in the *Handbook*, have not regarded them as unusual.

Without further explanations from these authors it is difficult to understand how their specimens can be regarded as varieties of a very unusual type.

References:—

[1] Harrison, James M. and Jeffery G. "*On varieties of the Tufted Duck, with an account of an unrecorded type of variation*" Bull. B.O.C., Voi. 80 pp. 25–28, 1960.

[2] Mendall, Howard L. "*The Ring-necked Duck in the Northeast*" University of Maine Bull. Vol. LX, No. 16, June 20, 1958.

[3] Witherby., H. F. *et al.* "*The Handbook of British Birds*" (Vol. 3), London.

Further remarks on Female Plumages of the Tufted Duck

by Drs. James M. & Jeffery G. Harrison

Received 21st April, 1960

We are grateful to Mr. E. H. Gillham for commenting upon our paper (*antea* Bull. B.O.C., 80:25–28) and in particular for stressing the dark type of summer plumage in the adult female. We should have discussed this point and are now availing ourselves of the opportunity to do so.

Mr. Gillham states that the first winter female is only to be distinguished from the adult female when some juvenile body feathers are retained, as the belly and vent of juveniles have a barred appearance. We are in agreement with this statement and have confirmed it on specimens of known age in our collections. In fact, we have three birds from the same brood, two of which are the accepted type of juvenile presenting the barred belly and vent, while the third bird, the centre specimen in our plate in the paper referred to, shows in addition to the normal *subdued* barring of belly and vent, the coarse and more generally distributed flecking to which our paper refers and which is quite different in character and extends onto the breast as well. These three birds are now illustrated in the accompanying plate.

With regard to the bird shown on the left of our original plate, which Mr. Gillham infers is in normal summer plumage, we would point out that according to the *Handbook*[1], this plumage is aquired between March and June. But here we have a bird which was photographed in life on 13th August, 1959, when it was caught and ringed in a duck trap; at that time it showed minimal dark flecking and, when killed by a fox on 4th September i.e. twenty-two days later, this flecking had become much more marked *whilst actually moulting into winter plumage*, the moult being confirmed when the bird was skinned, and this we consider unusual.

With regard to the bird shown on the right of our plate, as this specimen was not prepared by us and was not sexed, beyond showing it as another example, we cannot comment further except to point out that not only are new white feathers developing in the breast, but also new *dark* ones, and this specimen is also moulting into winter plumage.

We maintain that the character under discussion comes into line with such other homologous recurring characters in the *Anatidae* as the white chin spot, the white undertail-coverts and the white facial band at the base of the bill, all of which are seen in this species.

The fact that similar plumage variants occur in the Ring-necked Duck, *Aythya collaris*, of course supports our view that this is of phylogenetic significance. However, we find in the Tufted Duck which we have discussed that this is due to a moult and not to wear. That such individuals have been observed frequently, does not detract from the probable significance of this plumage and since, as is shown by an examination of our specimens, the condition of coarse flecking is occasioned by a simultaneous autumnal moult of both white feathers of the winter and a generation of new brown feathers, this plumage can only doubtfully be included as a normal adult female plumage phase.

The more attention that is given to these transient and variant characters in the *Anatidae*, the more importance can be attached to them, and until they have been described and discussed and their significance assessed they are, we believe still best referred to as unusual.

Reference:—

[1] *The Handbook of Brit. Birds*, 1939. III, 300.

Remarks on the Flower-pecker, *Dicaeum agile* (Tickell)

by MR. H. G. DEIGNAN

Received 19th April 1960

Dr. Finn Salomonsen has recently (Amer. Mus. Novit., No. 1991, 1960) reviewed certain flower-peckers, among them *Dicaeum agile* and its relatives. Since his conclusions are in many ways different from those of all other recent authors, I have carefully restudied the material in the United States National Museum (not examined by Dr. Salomonsen) in the light of his findings. So far as *Dicaeum agile* is concerned, I believe that the last word is still to be siad.

On page 4 of his paper, Dr. Salomonsen refutes the "lumping" of the *agile-modestum-obsoletum* assemblage into a single species, "first of all because two of them live side by side in Malaya." On page 5, we read that "the two groups that occur together in Malaya are *modestum* and *everetti*, a fact that makes it impossible to treat them as conspecific." On the same page we learn that *modestum* is distinguishable by having the "outer two to four tail feathers tipped with white," while *everetti* has the "tail feathers uniform blackish brown, without white tips."

The only specimen in Washington from Borneo (where *everetti* alone occurs) has the tail feathers distinctly tipped with white!

I wish, however, to pay special attention to Dr. Salomonsen's treatment of the forms of what he conceives to be *Dicaeum agile* (pages 6-13). He states that "the type specimen of *modestum*, which I have examined in the British Museum, was collected at Mergui by W. Davison and is a fine, fresh-molted, adult male. Unfortunately Hume in his original description . . . gave the type locality only as 'S. Tenasserim,' and, although he subsequently . . . stated that the area in which Davison collected was restricted to 'Mergui and to the south of that place,' the name *modestum* has been transferred by recent students to the distinct form that inhabits southernmost Tenasserim and southern peninsular Siam and that must be called *remotum*."

Since Hume based his new form on four male and five female specimens, from Mergui and Maliwun (both in the Mergui District, which Hume constantly referred to as "Southern Tenasserim"), there is no holotype of *modestum*, but, rather, nine cotypes from two localities; it would be interesting to know by whose action and on what grounds a particular male from Mergui now masquerades as "the type".

While Hume could not distinguish between birds of the two localities, Dr. Salomonsen not only finds differences, but identifies as *modestum* a bird from "80 miles south of Mergui", and as *remotum* those of Maliwun, only seventy miles farther to the south in a region of notably homogeneous avifauna. But assuming that the distinctions seen by Salomonsen between birds of Mergui and Maliwun actually exist, why did he not, in the non-existence of a holotype, simply restrict the type locality to Maliwun (as had inferentially been done by the several authors he cites?)

Since there is no holotype, I here restrict the type locality of *Prionochilus modestus* Hume, 1875, to Maliwun, Mergui District, Tenasserim; if, in the future, anyone feels compelled to create an unnecessary lectotype, it must be chosen from amongst Hume's original specimens from Maliwun. By this obvious and legitimate move, the name *modestum* continues to be the valid one for the birds of the Malay Peninsula from the Mergui District southward ("*remotum*" of Salomonsen's paper), while *pallescens* Riley, 1935, survives for those of the Indo-Chinese countries northward and eastward from the Mergui District ("*modestum*" of Salomonsen), and the general usage of the past fifteen years is confirmed.

Dr. Salomonsen states that he is unable to accept the putative races of *Dicaeum agile* named from Assam and southern Annam. I cannot quarrel about a matter so subjective, but would point out that immatures (known by their pale mandible) and worn birds of spring and summer are taxonomically valueless. Adult specimens of *pallescens* in Washington, collected in November, January, and the first week of February, differ from topotypes of *separabile* taken in October, November, and January; on the other hand, adults of *pallescens* taken in March, April, and June are inseparable from those of *separabile* collected in July. I would further observe that it is very risky to assume that material from Lao Bao in central Annam can serve as a criterion of the validity of a form named from the Lang Bian Plateau of southern Annam, or even of one named from the geographically nearer Plateau des Bolovens in southern Laos.

Genera *Corythornis, Ipsidina* and *Myioceyx*

by MAJOR MELVIN A. TRAYLOR

Received 9th May, 1960

In 1951 Delacour (Auk 68: 51) published a revision of the small kingfishers of the sub-family Alcedininae. He considered that the arrangement followed by Peters (1954, Bds. Wld. 5: 170-185), in which the species were allocated to *Alcedo* or *Ceyx* by the character of four or three toes respectively, was artificial and that different criteria should be used.

Delacour considered that within the sub-family there were two natural groupings: 1) those forms that were always found near water, were primarily fish-eating and had slender, sharply keeled, usually black, bills, and 2) those that were frequently or always found away from water, were primarily insect eating and had broader more rounded, usually red, bills. The former are *Alcedo*, the latter *Ceyx*. Delacour's classification resulted in removing from *Ceyx* to *Alcedo* the following Oriental-Papuan forms: *cyanopectus*, *argentata*, *azurea* and *pusilla*. Within Africa the following forms were placed in *Ceyx*: *picta* and *madagascariensis* from *Ispidina*, and *lecontei* from *Myioceyx*.

There is no doubt that Delacour was right in minimizing the importance of the number of toes as a generic character. Within the sub-family the second toe is always greatly reduced or wanting and its final disappearance in different species is not necessarily a sign of relationship. The transfer of the four three-toed forms mentioned above from *Ceyx* to *Alcedo* makes both genera more uniform.

This was long ago recognised by Sharpe (1868-71, Monog. Alcedinidae) who kept these four species in *Alcyone* and placed them next to *Alcedo*.

There is a question, however, as to the propriety of transferring the African *picta*, *madagascariensis* and *lecontei* to the otherwise Oriental-Australian *Ceyx*. I believe that these forms were derived independently from forms related to the African *A. cristata* and *leucogaster* (formerly kept in a separate genus *Corythornis*) and that the resemblances that they show with *Ceyx* are due to convergence.

Amadon has recently (1953, Bul, Am. Mus. Nat. Hist., 100: 420) shown the close relationship between *cristata* and *leucogaster*, and by demonstrating that the relationship of the Gulf of Guinea forms *nais* and *thomensis* is with *leucogaster* instead of *cristata* he has shown that the specific characters separating the two forms are slight. Nominate *leucogaster* of Fernando Po and the continental races *batesi* and *leopoldi* can be immediately separated from *cristata* by having the mid-line of the underparts pure white bounded on the sides by chestnut. In *cristata* the throat is white and the remainder of the underparts uniform rufous. However, *A. l. nais* from Principe Is. has the mid-line of the underparts sometimes washed with rufous, and in *thomensis* of Sao Thome Is. the breast and belly are uniform rufous as in *cristata.* On the upperparts, *cristata* differs from *leucogaster* in having the feathers of the crown much more elongated to form a distinct crest and in having the cross bars of the crown pale greenish blue rather than ultramarine like the back. Again, however, *nais* and *thomensis* are intermediate in this respect.

Both *cristata* and *leucogaster* differ from all other African *Alcedos* in having a red rather than black bill. In *cristata* the bill typically narrow and compressed, but in *leucogaster* it is somewhat broader in an approach to the *Ispidina* or *Ceyx* type.

This summary of the characters of *cristata* and *leucogaster* is necessary to understand the relationship of these two to *Ispidina picta* and *madagascariensis.* Viewed from below, *picta* cannot be separated from *cristata* except by the much broader bill. On the upperparts *picta* differs from *leucogaster* only in having a broad rufous hind collar and in having the ear coverts and hind collar washed with violet. These characters are foreshadowed in the lower Guinea *A. l. batesi* which has a broad rufous supercilium washed with violet, and occasional specimens of *batesi* show a trace of a hind collar. This combination of characters is similar to that shown by the island races of *leucogaster* and argues the close relationship of *picta* to *leucogaster* and *cristata.*

The Madagascar *I. madagascariensis* differs from all other African kingfishers in being wholly rufous above, in this respect resembling the Philippine *rufidorsum.* On the underparts, however, *madagascariensis* agrees with *leucogaster* in having the mid-line pure white, a character not found in *Ceyx.* It also agrees with *picta* and differs from the species of *Ceyx* in having four toes instead of three.

The character in which *Ispidina* differs from *Alcedo* and resembles *Ceyx* is the broad bill with more rounded culmen. This type of bill is correlated with feeding habits; both genera are found generally in the forest or, in the case of *Ispidina,* in the savanna and are not restricted to water, and both feed primarily on insects rather than fish or aquatic life. The broad, rounded bill is therefore an adaptive character that develops in species that become primarily insectivorous in habit. It has developed independently in the African *Ispidina* which is closely related to *Alcedo leucogaster* and *cristata* and does not indicate a close relationship to *Ceyx.*

Myioceyx lecontei has carried the development of an insectivorous type of bill to an extreme and is characterized by a flattened, blunt tipped bill. In plumage it differs from *Ispidina picta* in having the crown rufous with faint violet spots instead of black barred with ultramarine, but in all other respects the two forms are virtually identical. *Myioceyx* belongs with *Ispidina* as a purely African forest kingfisher.

There have been four commonly recognized genera for the small kingfishers in Africa. They are:

Alcedo—semitorquata, quadribrachys
Corythornis—cristata, leucogaster (placed in *Alcedo* by both Peters and Delacour)

Ispidina—picta, madagascariensis
Myioceyx—lecontei

The first, *Alcedo*, is characterized by larger size and black bill. The other three are all small, red-billed and closely related in color pattern. They differ among themselves only in the shape of the bill, and even in this character the genera *Corythornis* and *Ispidina* are linked by *C. leucogaster* which has a bill intermediate in width between *C. cristata* and *I. picta.* Since in this group bill shape is an adaptive character, the differences between the last three genera listed above are not sufficient to support generic recognition, and I recognize only two genera in Africa:

Alcedo—semitorquata, quadribrachys
Corythornis—cristata, leucogaster, picta, madagascariensis, lecontei.

Note: I am convinced that the resemblances between *Corythornis* and *Ceyx* are due to convergence and do not show close relationship. I am not as convinced that *Corythornis*, *Ispidina* and *Myioceyx* should be lumped, although I believe that this arrangement best shows that they are a natural group of closely related forms.

A new form of *Cisticola textrix Vieillot*

by MR. C. M. N. WHITE

Received 19th April, 1960

In 1930 Lynes recognised only two forms of *Cisticola textrix*, the spot breasted nominate form of the south west Cape Province and the plain breasted bird of further east and north to the Transvaal which he called *mystica*. In adopting *mystica* described in 1914 for the eastern bird, he left in doubt the correct use of *major* proposed a year before in case it should prove a distinct form. The question does not seem to have been carried any further since then and Mr. P. A. Clancey kindly informs me (in litt.) that inadequate material has been available to him to elucidate the point. Under these circumstances it seems preferable to adopt *major* for all the south eastern and Transvaal birds until further evidence is forthcoming. Since 1930 a further form has been described by Roberts (1932) from north Zululand characterised by small size and darker upper side, characters which Mr. Clancey points out are born out by further material of *marleyi.*

Later Lynes collected *textrix* in Angola, naming the birds from the highlands west of the Kwanza river as *bulubulu*, but regarding the east Angola population as identical with Transvaal birds. It is now known that no *textrix* occur between north west Northern Rhodesia and the Transvaal so that it seemed likely that these two populations would prove distinct. The British Museum series from east Angola proved however to be too worn for a conclusive decision, but through the kindness of the National Museum, Bulawayo specimens from the Kabompo district of Northern Rhodesia have been compared by Mrs. Hall with the B.M. series and found to be distinct. I therefore propose:—

Cisticola textrix anselli subsp. nov.

Description: breeding dress like *major* (i.e. *mystica* auct.) but males probably with a darker crown; material of breeding birds inadequate. Non-breeding dress much paler than *bulubulu* and thus resembling *major*, especially in lacking rich red on upper tail coverts, but differing from *major* and resembling *bulubulu* in having part of mantle feathers edged with white to give a whitish streaky effect.

Type: adult male collected by C. M. N. White on Minyanya plain, western Balovale, Northern Rhodesia on 15th June, 1943. In non-breeding dress. In my collection for deposit with National Museum, Bulawayo.

Distribution: plains in north west Northern Rhodesia in Kabompo and Balovale districts north westwards into Angola along the Lobito railway line to Vila Luso.

Notes: Named after Mr. W. F. Ansell, Provincial Game Officer, Kabompo who has recently contributed many interesting new records form that area. I am much indebted to the National Museum, Bulawayo for lending material of this species to the British Museum, to Mrs. Hall who made comparisons there on my behalf and provided the date upon which this note is largely based, and to Mr. Clancey for information about South African races examined by him.

Further notes on African Warblers

by Mr. C. M. N. White

Received 5th March, 1950

1. Some Central African forms of *Apalis thoracica.*

In Southern and Northern Rhodesia and Nyasaland occur three races commonly recognised as *rhodesiae*, *arnoldi* and *whitei*. All are characterised by the reduction of yellow on the underside which is white except for the black collar and yellow on the lower abdomen. The extent to which they are washed with green on the mantle is very variable. I have recently been able to examine a series of 60 examples of the Southern Rhodesian forms, and 11 *whitei* from Northern Rhodesia and Nyasaland.

Typical *rhodesiae* from the Matopos and adjacent areas whence I have seen 14 specimens has hardly a trace of green on the grey mantle, whilst the yellow of the lower belly is distinctly buffy in tinge. From Mt. Selinda to eastern Inyanga birds lack this buffy tinge in the yellow which is thus much purer yellow, sometimes slightly green tinged. The mantle shows a more marked greenish wash, sometimes strongly developed. In between there is a good deal of variation and a gradual cline of change. In Northern Rhodesia a population occurs in the Muchinga escarpment from Serenje to Mpika which has been identified with *whitei* of west Nyasaland. But for the gap in range caused by the Zambezi valley, it would be undesirable to distinguish these birds from *arnoldi* of eastern Southern Rhodesia. The development of green above is quite variable and the only difference I can see is that in series *whitei* has the flanks slightly greenish tinged, and not so clear yellow as *arnoldi*. Individual specimens are not separable. C. W. Benson tells me that he has seen *whitei* as far south as near Zoube in Nyasaland. Despite the broken range, I believe it is preferable to unite *whitei* (1937) with *arnoldi* (1936) and merely draw attention to the slight and inconstant average differences. Four examples of *youngi* from the Nyika are very distinct, lacking any green above or yellow on the belly.

2. The relationship of *Camaroptera brachyura* and *C. brevicaudata.*

The close relationship of these two species has been long recognised. *C. brachyura* has a green back, *C. brevicaudata* a grey or brownish grey back. In general they are allopatric, *brachyura* living in the coastal areas of the Cape Province north through eastern Tanganyika to south east Kenya, and *brevicaudata* in general widely ranging north and west of this range. *C. brachyura* is associated in general with more humid areas and lives especially in evergreen cover, whilst C. *brevicaudata* where its range approaches that of *brachyura* lives in dryer country in scrub and thickets, but avoids evergreen forest. Benson (1953, Check List of the Birds of Nyasaland) records both species, but notes that some individuals seem to be intermediates between the two species.

I have recently been able through the kindness of the National Museum, Bulawayo to examine over 200 *brevicaudata* and 18 *brachyura* from southern and central Africa. In the areas where the ranges of the two species meet, the differences between them are very striking. *C. b. sharpei* in breeding dress is grey above and on the throat and chest, in non-breeding dress grey brown above and tawny washed on breast and sides; the tail is never green, but always grey or brownish grey. In *C. brachyura* the back is green and the tail also green. I have also found 9 birds which are quite clearly intergrades between these two extremes. They come from Inyanga, the Sabi-Lundi junction, Haroni-Lusitu junction and Pungwe river on the eastern edge of Southern Rhodesia, Gorongoza in Portuguese East Africa, Port Herald in Nyasaland and Isoka, Northern Rhodesia. In general these birds even when collected in the non breeding season are grey above like breeding *brevicaudata*, though one is quite as brown above and tawny below as non breeding *brevicaudata*. All show variable amounts of green on the grey or brown mantle, and the tail colour varies, sometimes being green and sometimes grey. Thus in this area there in no doubt that the two species are not in fact biologically isolated, but occur in hybrid form as Benson suspected earlier for Nyasaland.

South of eastern Transvaal and northern Zululand, only *brachyura* occurs and the two birds are allopatric. In Portuguese East Africa although *brachyura* is widespread, *brevicaudata* penetrates in places even as far east as Zimbiti near Beira. About Port Herald in south Nyasaland most birds are *brachyura* but intermediates occur, in eastern Tanganyika only *brachyura* seems to have been reported. Both are alleged to occur at Mombasa. The voices of the two species are quite alike (fide Benson), and where the ranges meet they tend to be ecologically separated as noted above, but in fact it is very clear that they are not biologically isolated and that intermediates are not uncommon. Thus in the material from the area of intergradation before me, 14 specimens are clearly *brachyura bororensis* and 9 are intergrades. In view of the degree of variation in the intergrades, this may well be a zone of secondary hybridization, but since intermediates are so common, it is no longer possible to treat these birds as two species, and all should be placed under the single species *C. brachyura*, the older name.

3. Taxonomic notes on some races of *Camaroptera brachyura*.

The differences between nominate *brachyura* and *b. bororensis* which is brighter and yellower above and whiter below are well known. Clancey has described as intermediate as *constans* from Zululand. I have examined specimens from just north of Zululand in Portuguese East Africa and cannot separate them from typical *bororensis*. Hence I believe that *constans* is a synonym of the latter. In any case the difference between *brachyura* and *bororensis* is not sufficiently great to justify naming an intermediate.

C. b. sharpei seems to extend from northern South West Africa to Southern Rhodesia, the Transvaal and Portuguese East Africa without sufficient difference to justify separating *noomei*, *beirensis* or *marleyi*. In general the more western birds from more arid areas average a little paler, but there is much individual variation, and subdivision is not desirable. *C. b. sharpei* is a particularly well marked form within the total variation of the species by reason of the contrasting colours of breeding and non breeding dresses, and the tawny wash on the underside of the latter.

In the north of Northern Rhodesia and further north I have long been aware that this marked seasonal plumage change is not found. In the material recently examined were 24 examples from this area (Balovale, Kabompo, Mwinilunga, Luluabourg, Mporokoso, Abercorn, lake Rukwa). These birds are clearly different from *sharpei*, nor do they agree with the two races further north, *tincta* and *griseigula*, and appear to require a name. I therefore propose:—

Camaroptera brachyura intercalata subsp. nov.

Description: breeding birds differ little from *sharpei* above, but below are much whiter on throat and chest, lacking the grey shade of *sharpei* in those areas; non breeding dress barely different from breeding dress but averages a little browner above, and below much whiter than non breeding *sharpei* and lacking most of the tawny which is only present as a wash on the flanks. Differs from the perennial dressed *tincta* in being whiter below instead of greyish on throat and breast; much whiter below on throat and breast than *griseigula* which has greyish brown flanks without the tawny buff tinge of this race.

Type: male, collected 62 miles south of Mwinilunga, Northern Rhodesia on 16th September, 1956 by Major I. R. Grimwood. In the National Museum, Bulawayo. Reg. No. NM, 28,763.

Range: interior of Angola from Malanje to the Kasai and area of central railway line east of Kwanza river, Northern Rhodesia north of a line from Balovale and Kabompo to Kasama and Abercorn; south west Tanganyika north and east to about Iringa and Bukoba; Katanga north in Belgian Congo to Luluabourg. 8 breeding and 16 non breeding birds examined.

4. The status of *Parisoma lugens clara* Meise.

Grant and Praed have stated that this form differs from *jacksoni* in its darker colour above and below. Comparison of material fails to reveal any such difference. I regard *clara* as a synonym of *jacksoni*.

I am greatly indebted to the National Museum, Bulawayo for the loan of very extensive material and to Mr. C. W. Benson for looking at these warblers with me.

5. *Prinia subflava.*

The broad pattern of variation in this species is now well known and the following notes refer only to some points largely concerning the Central African races. Macdonald in 1941 showed that the bird included as nominate *subflava* consisted of two races, the paler and more northern of which he separated as *desertae*. In fact a name was already available viz. *Prinia pallescens* Madarasz, 1918, Ann. Mus. Hung. p. 593. Sings, Sennar. The pale race thus becomes *P. s. pallescens.*

Macdonald also separated two pale races allied to *affinis* as *bechuanae* and *ovampensis*, the former supposedly paler and greyer than *affinis* above in non breeding birds, and the latter paler brownish above in non breeding dress. He had rather limited material of both. There is now very extensive material of *bechuanae* in the National Museum, Bulawayo from north Bechuanaland and Barotseland. This shows that in both breeding and non breeding dress *bechuanae* is paler above than *affinis* and whiter below with less tawny on the flanks. Mrs. Hall has re-examined the 7 *ovampensis* in the British Museum (Nat. Hist.) and assures me that they are paler and more sandy above than *affinis* or *bechuanae* but the differences are not well defined. With the long series of *bechuanae* now available it is clear that many fit this definition of *ovampensis* since *bechuanae* is not in fact greyer above. It seems advisable to unite *ovampensis* with *bechuanae* at least until better material becomes available.

Populations from the eastern and southern Belgian Congo and Angola have recently been called *P. s. graueri.* Dr. Amadon has kindly examined the topotypical material of *graueri* in the American Museum of Natural History from the region of Baraka, north west of lake Tanganyika and assures me that *graueri* has only a perennial dress; it is thus virtually identical with *immutabilis* and *tenella.* I regard these last three races as best united under *tenella.* Birds from Angola and north west Northern Rhodesia cannot be *graueri* for they have a definite non breeding dress. In breeding dress they are darker above than *affinis*; in non breeding dress they are darker above than non breeding *affinis* and strongly washed with olive brown. They represent *P. s. kasokae* of which it would appear that *canzelae* Meise must be a synonym. Between their range and Baraka further investigation is needed and there may be some instability in plumages since at Mwinilunga it appears that this warbler has no non breeding dress but in its perennial dress agrees rather with *kasokae* than with *tenella.*

6. *Prinia leucopogon.*

The upper Guinea *leontica* described as a distinct species is on examination, no more than a well marked subspecies of *leucopogon.*

7. *Bremomela scotops.*

Variation in this species has not been adequately defined in the literature. On the eastern side of Africa nominate *scotops* and the more northern *occipitalis* seem not to differ in size and the few *occipitalis* available in the British Museum can (fide Mrs. Hall) be matched by examples of *scotops* with dark heads and bright breasts. As the range is continuous and the long series of 70 nominate *scotops* which I have examined shows much individual variation, I believe the two should be united. Nominate *scotops* intergrades with white bellied *pulchra* in the Wankie area of Southern Rhodesia. The variation between yellow bellied and white bellied birds where they intergrade in such an area indicates that no useful purpose would be served in naming any intergrade. A precisely similar situation exists in north Angola where *congensis* (very like *scotops*) intergrades with *pulchra.* Here the few intergrades known have been named *angolensis*, a name which does not seem worth recognising as a separate race. In western Barotseland a series shows the extreme of reduction of yellow and Mr. Benson and I believe that it should be named :—

Eremomela scotops extrema subsp. nov.

Description: differs from *E. s. pulchra* as follows:—above paler grey, the grey invading the hind crown up to the level of the eyes and green of the fore crown duller and paler; green on wing edges paler or obsolete; below, the yellow of the breast paler and more restricted in area, leaving more of the throat white, and itself somewhat mixed with white.

Type: male, collected on Lungwevungu river, Northern Rhodesia on 18th November, 1959 by C. W. Benson. National Museum, Bulawayo. No. 41035.

Range: western Barotseland from Sesheke to the Kwando river on the Angola border and north to the Lungwevungu river; only west of the Zambezi in very dry country.

8 *extrema* and 41 *pulchra* compared.

I am much indebted to the National Museum, Bulawayo for the loan of material, to Mrs. B. P. Hall for answering queries and comparing material and to Mr. C. W. Benson who examined material with me.

8. On *Camaroptera brevicaudata beirensis* Roberts.

In an earlier note in this series I showed that *Camaroptera brachyura* and *C. brevicaudata* hybridize extensively in a zone extending from Isoka in Northern Rhodesia to south Nyasaland and along the border of Southern Rhodesia and Portuguese East Africa. Roberts in 1932 proposed *C. brevicaudata beirensis* from Beira in Portuguese East Africa, and through the kindness of the Director of the Transvaal Museum and of Mr. Prozesky I have now had the loan of 8 specimens from the Transvaal Museum. These comprise the following material:—

A male and female from Msusa and Messanguese, near Tete in the Zambezi valley; these are both typical dry season *C. b. sharpei* as might be expected, collected in July.

A male and female collected in June at the Sabi-Lundi confluence just inside Southern Rhodesia. These birds are like *C. b. sharpei* below, but darker and greyer above and have darker and greener wings than dry season *sharpei*. Though neither shows any admixture of green on the mantle they resemble other birds from the same area already reported upon in my earlier note.

Four examples from Zimbiti and Beira consisting of:—

(a) a male collected in August, i.e. non breeding. This resembles the Sabi-Lundi birds above and has a grey tail; below very white.

(b) A female collected in December is much mixed with green on the mantle, and the underside is more greyish on the chest and sides; tail grey.

(c) A male collected in March which resembles (b) but has some green feathers in the crown; tail grey.

(d) A male collected in March is greener than any of the above, the head top being green and the tail also mainly green. This is practically a typical juvenile *brachyura* but rather mixed with grey above.

The last mentioned bird is labelled as Beira, the other three come from Zimbiti, about 23 miles inland and the type locality of *beirensis*.

Thus the name *beirensis* is based upon a hybrid population with its characters perhaps rather more like *sharpei* than *brachyura*, especially in its grey tail. Typical green backed *brachyura bororensis* have also been collected at Beira (Clancey, 1956, Durban Mus. Novit. 4, pt. 15, p. 256), and also occurs in the south at Inhambane, Manhica and Vila Luiza. The pattern of penetration of grey backed birds into Portuguese East Africa needs careful field investigation. It may be possible in the future to show that the hybrid zone is sufficiently stable to justify using *beirensis* as a trinomial designation for it, but until this can be demonstrated I prefer merely to draw attention to the extensive area of hybridization between grey backed and green backed forms.

9. Some monotypic genera of African warblers.

As with most Passerine families of birds, the definition of the genera of African warblers is extremely difficult and a number of monotypic genera are currently recognised, not all of which are of equal value.

Phyllolais: this species is very close to *Apalis* and constructs a similar type of nest. The bill is unusually small and fine but the tail is similar to many *Apalis* except in its slightly different distribution of white. I think *Phyllolais* can usefully be united with *Apalis*.

Artisornis: structurally very like *Apalis* also, but with a proportionately longer bill, the tail feathers extremely narrow and the tail rather short, wing tail ratio 73–81%. The best justification for the genus seems to be its tailored nest, i.e. quite unlike the pouch type of nest of *Apalis*. This character may not be so important as it at first seems, for *Cisticola erythrops* and *C. cantans* are abnormal among *Cisticolae* in having this type of nest instead of the usual "ball" type or variations upon it. *Artisornis* may be a link between *Apalis* and *Camaroptera* in which tailored nests are the rule. I retain it as a genus and would provisionally add to it *Apalis moreaui* which also has an abnormally long bill, and unlike *Apalis* but like *Camaroptera* lives near the ground and not in tree tops.

Scepomycter: originally placed in *Artisornis*, this warbler seems to exhibit little similarity to it. It is a large, heavily built warbler with very large feet and in the male examined by me the tail 56 mm. is nearly as long as the wing (59 mm.) The tail is somewhat graduated and rather soft with traces of decomposed webs. The wing is very rounded, and the first primary unusually large and broad, and measures 24 mm. In structure *Scepomycter* seems to me to be very like the forest species of *Bradypterus*. Its colour pattern is unique. I would regard this as best kept as a monotypic genus of uncertain affinities, and perhaps related most closely to *Bradypterus*.

Euryptila: through the kindness of the Transvaal Museum, I have had the loan of a good series of this warbler. It appears to have some resemblance in structure and even in a generalised way to *Bradypterus victorini*. The tail is slightly longer than the wing, strikingly black in contrast with the rest of the plumage and consisting of rather broad and soft feathers with a tendency to be decomposed at the edges apically. The bill is rather long. The colour pattern is peculiar and unlike other African warblers. Best retained as a monotypic genus of uncertain affinities.

I am greatly indebted to Mr. J. G. Williams for the loan of material of *Phyllolais*, *Artisornis* and *Scepomycter* from the Coryndon Museum, to the Transvaal Museum for the loan of material cited above and to Mr. C. W. Benson for examining most of this material with me.

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DINNERS AND MEETINGS FOR 1960

15th November and 20th December.

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Edited by
Dr. JEFFREY HARRISON

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PURCHASED

The five hundred and eighty-fifth meeting of the Club was held at the Rembrandt Hotel, S.W.7., on 15th November, 1960.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 28; Guests, 6; Guest of the Club, Dr. W. E. Swinton; Total: 35.

Colonel O. E. Wynne read a brief historical sketch of Major-General Sir Patrick Lindesay (1778–1839), soldier and naturalist.

Dr. W. E. Swinton then gave a most interesting talk on Archaeopteryx, illustrated by slides, an account of which follows:—

Archaeopteryx

Archaeopteryx is the oldest bird we know, since it was found in the Middle Kimmeridgian limestone of Solnhofen, Germany, and is thus of Upper Jurassic age, or, in terms of years, approximately 150 million years old.

The bird was first known by a feather, found in part and counterpart in 1861. One of the impressions went to Berlin, the other to Munich and both still exist.

Shortly after this discovery an incomplete skeleton was found at Langenaltheimer Haardt and passed into the keeping of the local doctor, Karl Häberlein. He was an assiduous collector of fossils and had many excellent things and a selection of these, including the bird, was purchased for £700 by the British Museum in 1862. Thus it is that the first *Archaeopteryx* skeleton is in London.

The nomenclature of this specimen is rather involved. Both the feather and the skeleton were named *Archaeopteryx lithographica* by H. von Meyer but A. Wagner refused to believe that a Jurassic fossil could be that of a bird and renamed it *Griphosaurus* under the impression that it was a pterodactyl. Owen, in London, made a full investigation of it and called it *Archaeopteryx macrura*.

In 1877 another and more complete specimen was found near Eichstätt, about 10 miles from the previous discovery. This was acquired for the Museum für Naturkunde in Berlin and named *Archaeopteryx siemensi*, after W. Siemens who had advanced the necessary £1,000.

Instead of consolidating knowledge of the genus, the two specimens were made the bases of much discussion and of immense phylogenetic responsibility. Most of this study was done by B. Petronievics, of Belgrade, who kept the name *Archaeopteryx* for the London specimen but renamed the Berlin one *Archaeornis.* He considered the former the ancestor of the Ratites and the latter the ancestor of all the Carinates.

In 1954 a critical and exhaustive review of the London specimen was published by Sir Gavin de Beer who reached the conclusion that not only were the two congeneric but conspecific.

In 1956, from the same quarry in which the London specimen had been found, another partial skeleton was discovered and lay unrecognised for two years. This is now in the Geological Institute at Erlangen and a full account of it has been given by F. Heller. It proves to be another *A. lithographica* almost identical in size and details with the London specimen. From the whole series it now seems clear that the first and the latest specimens are adults, while the Berlin specimen is somewhat younger. Age differences and post-mortem influences would account for the variations that have been deemed important in the past. Apart from their antiquity, the specimens throw valuable light on the origin of birds, for *Archaeopteryx* has an undeniably reptilian skeleton, with sharp little teeth in the jaws, with typical amphicoelous vertebrae, with a long tail (of 20 centra), and with non-pneumatic long bones. The skeleton shows a mosaic of characters between the state of affairs in the Thecodont reptilian ancestors and the requirements of modest gliding flight. The very instability of the bird gave an impetus to vertebral and tail rearrangements of evolutionary importance. It is possible to trace back the features that *Archaeopteryx* shows to the kind of ancestor that must have existed, and which seems to be found in the Pseudosuchian reptiles.

What they all reveal is that for many hundreds of years at least, in Solnhofen, *Archaeopteryx* was the standard form of tree-glider, whose instability led these specimens to be blown away during gales into the nearby Solnhofen lake, there to be preserved in the fine-grained mud.

Notes on the Cape Shoveller

by DR. J. M. WINTERBOTTOM & MR. E. H. J. MIDDLEMISS

Received 25th March, 1960

POSSIBLE MALE BREEDING PLUMAGE

The suggestion by Benson (1950) and Benson and Grimwood (1959) that the male of the Cape Shoveller *Anas smithii* (Hartert) (*Spatula capensis* (Eyton)) may occasionally assume a full nuptual plumage like that of the European bird *A. clypeata* Linnaeus; and that reports of the latter from the southern Cape are due to this phenomenon, has led us to go into certain aspects of the structure and plumage of the Cape bird. In commenting on Benson and Grimwood's paper, we had inclined to support different views, one of us (E.H.J.M.) considering that Benson and Grimwood were probably right and the other (J.M.W.) that they were probably wrong. One of the factors influencing E.H.J.M. in his view was that if the European Shoveller did occur at the Cape, although it would probably usually be in eclipse plumage, when it is fairly similar to the

Cape bird, nevertheless it seemed unlikely that he would have noticed nothing in view of the thousands of Shoveller he sees annually and the 250 that have passed through his hands for ringing. The bulk of these latter have been trapped in December and January, which is the time at which the European Shoveller, if it occurs, would be most likely to be present. This argument remains valid.

The only records of the European Shoveller in South Africa are all of males in full, or almost full, breeding plumage; and mostly at a time when they might be expected to be in eclipse plumage. However, the question of eclipse plumage is by no means straightforward. Benson and Grimwood quote Delacour (1956) to the effect that the full plumage is acquired by a gradual and irregular moult between August and December; and, in the case of juvenile drakes, Witherby, Jourdain, Ticehurst and Tucker (1943) say "moult begins about August, but little change takes place until about end Jan. or Feb. . . . though often still patchy by April." It might therefore be reasonably expected that most male European Shovellers would be in some sort of intermediate plumage when (and if) they reached the Cape; but none such has been reported.

This argument, however, is not really relevant, since it does not bear on the specific identity of the birds but only on the state of their plumage—a *smithii* moulting into *clypeata*-like breeding plumage might be expected to do so in the same way as *clypeata* itself; and none such has been recorded either. Nevertheless, the fact that only full-plumaged males have been recorded is decidedly odd. No adequate explanation is forthcoming; and E.H.J.M. is still inclined to discount them.

Another point relates to the systematic position of the two forms. Benson and Grimwood belong to the school that regards *clypeata* and *smithii* as conspecific. They quote the case of *Anas c. castanea* of southern Australia, which shows sexual dimorphism, whereas the tropical subspecies of the same species are coloured alike throughout the year; and suggest that the temperate examples of *smithii* may plausibly be expected to react occasionally in the same way as the temperate *clypeata* does normally. We shall produce evidence below to suggest that *smithii* is, as a breeding bird, purely temperate; but meanwhile we may note: (a) the case of *Anas castanea* is only relevant if occasional examples of some other subspecies assume breeding plumage like that of *A. c. castanea*; and (b) it depends for any relevance it may have on the acceptance of the conspecificity of *clypeata* and *smithii*, an assumption which we, like Delacour (1956), reject. We believe that their view of the extremely close connection between *clypeata* and *smithii* has led Benson and Grimwood to overemphasise the likelihood of *smithii* responding similarly to *clypeata* to a temperate climate.

There is, too, a hidden assumption here which we do not accept either: that during the course of evolution *smithii* has lost a breeding plumage similar to that of *clypeata* but that this plumage can occasionally be regained in response to the appropriate environmental stimulus. For reasons set out below, we believe that *smithii* is, in general, a more primitive form than *clypeata*; and there is no reason to suppose that it has ever evolved a breeding plumage of the degree of dimorphism represented by *clypeata*.

Benson and Grimwood also mentioned the possibility that some or all of the South African records of the northern Shoveller were due to escapes from captivity. This is much more likely and is, indeed, probable in some cases, since Dr. G. J. Broekhuysen tells us that at the time he saw one at Riet Vlei, he discovered that European Shovellers were being kept at Wynberg Park; and he thinks it quite possible that the one he and Meiklejohn saw, to which Benson and Grimwood refer, may also have been an escape. We may add that, although Benson and Grimwood state that the Cape Bird Club *Check List of the Birds of the S. W. Cape* lists *clypeata* "without question", this is not the case—the comment is made "at least one of these records [out of four] is open to suspicion as an escape from captivity". Since the *List* was published, there has been an additional record from the vicinity of Cape Town and another from De Hoop, Bredasdorp District; besides one from Port Elizabeth and another from East Griqualand (in May): and local aviculturalists have no knowledge of recent attempts to keep the European Shoveller in captivity. None of this is conclusive, but the number of reliable records seems high for a bird so seldom kept by aviculturalists.

COMPARATIVE DATA

When we decided to enquire further into the resemblances and differences between *clypeata* and *smithii*, it at once became apparent that the literature on the subject was totally inadequate. Nobody seems to have measured a really adequate series of *clypeata*—Witherby, Jourdain, Ticehurst and Tucker (1943) give figures for drakes based on only 12 examples; and though Bannerman (1932) gives measurements of "a large series," the sexes are lumped together and no measurements are given for the beak. Chaundy's compilation (1959) shows that no adequate series of *smithii* exists even if the collections of the British Museum, the Wildfowl Trust and all African Museums are pooled. Furthermore, the published works we have consulted are all erroneous, incomplete or misleading in their accounts of the status of *smithii* and none makes any reference to its movements except McLachlan and Liversidge (1957), and their account is likewise incomplete. We have therefore included a summary of the numbers, movements and breeding records based on recent publications (Taylor, 1957; Liversidge, 1958; Shewell, 1959) and unpublished data in the files of the African Wildfowl Enquiry (chiefly from C. A. van Ee and the Cape Bird Club team of census workers) and of the South African Ornithological Society (for breeding).

The usual differences given in literature between the European and Cape Shovellers are the absence of male breeding plumage, the general darker colour and the brown (not white) colour of the shafts of the primaries of the Cape bird. We can confirm all of these; but they are by no means the only differences. In connection with the shaft-colour, Benson and Grimwood have commented that it might not be constant. It should therefore be recorded that for the past two years, E.H.J.M. has examined the shafts of the primaries of all Shovellers trapped at Rondevile and all were brown.

The comparative measurements are set out in Table I. In discussing them, we propose to ignore the bill length of 76 mm. given for a male *clypeata* by McLachlan and Liversidge (1957), since the exceptional figure suggests that the measurement was made from the skull, whereas all the other measurements were made from the feathers.

The Table suggests that *clypeata:* (i) tends to have a rather longer wing (minimum 215, as against 212 for *smithii;* maximum 260, as against 252); (ii) tends to have a shorter tarsus (min., 32; max., 39: as against 33 and 45 respectively); (iii) tends to have a longer beak (min., 56; max., 70: as against 54.5 and 65 respectively); (iv) has a beak wider at the tip (27–34, as against 24–32) and perhaps narrower at the base (16–18, as against 17–19), a feature which, close as the measurements are, is perceptible to the eye when skins are placed side by side; and is born out by the statement of Witherby *et al.* that the maximum width is twice the base in *clypeata;* in *smithii*, it is only 1½ times the base.

Of these different characters, we may assess wing—, tarsus— and beak-lengths as of subspecific grade or lower; and general colour and colour of the primary shafts as of subspecific grade. There remain for consideration the differences in male breeding plumage and in the shape of the beak. In both these characters, the Cape Shoveller is less specialised than the northern bird. Delacour (1956) regards the two species as closely allied to each other and to the Garganey *A. querquedula* Linnaeus but he does not suggest that they are conspecific. While the importance of sexually dimorphic plumage as a taxonomic character has often been over-emphasised, it must be given some weight; and we believe that its absence, together with the less specialised bill, are adequate grounds for regarding *clypeata* and *smithii* as good species.

Sibley (1957) attributes the absence of sexual dimorphism in African ducks to the lessened selection pressure against hybridisation, which is notoriously frequent in Holarctic ducks—the northern Shoveller, for instance, has inter-bred in the wild with the Blue-winged Teal *Anas discors*, the Mallard *A. platyrhynchos*, the Pintail *A. acuta* and the Gadwall *A. strepera.* Sibley says: "In Africa not more than six species [of *Anas*] may be sympatric . . . There is, however, apparently a tendency for these species to segregate ecologically to a greater degree than do the Holoarctic sexually dimorphic species . . . These factors act to reduce the opportunity for the formation of mixed pairs. This in turn has apparently reduced the pressure of selection from this factor and permitted the various species to respond to the forces of selection producing concealing patterns of colour."

Whatever the reasons may be, however, we consider that the balance of probability is that *clypeata* and *smithii* diverged before the stock had evolved a marked sexual dimorphism and that *smithii* has never possessed a male breeding plumage of this sort; probably, indeed, remaining close to the ancestral form from which *clypeata* evolved in the north.

STATUS AND MOVEMENTS

The Cape Shoveller has usually been considered rare. Thus Stark and Sclater (1906) call it "by no means common"; Horsbrugh (1912) says "rather a rare duck in South Africa"; Bryden (1936) observes "found sparingly in most parts of South Africa"; Roberts (1940) remarks "not plentiful anywhere"; and Delacour (1956) considers it "the rarest and least known of the Shovellers". McLachlan and Liversidge (1957) summarise its status in South Africa as: "Found mainly in the Cape Province, Free State and Transvaal . . . a single record from Southern Rhodesia . . .

rarely from Natal. Common in Bechuanaland and scarce in S.W.A. as far north as the Okovango R. and Damaraland. Records north of the Zambesi are confusing . . . A common resident with local movements possibly coupled with the occurrence of rain.'' This is certainly much nearer the truth than the other quotations but is nevertheless not entirely satisfactory.

North of the Union, the Cape Shoveller is certainly an uncommon bird. Thus Benson and White (1957) reject all Northern Rhodesian records and it was never identified by J. M. W. in those waterfowl paradises, the Barotse Plain and Kafue Flats, between 1939 and 1949. Mackworth-Praed and Grant (1952) say it is a ``usually scarce duck, perhaps commonest in Matabeleland''; and an adequate comment on the last phrase is that Smithers, Irwin and Paterson (1957) give only a single record for that area, though they add, ``quite common on the Nata River, Bechuanaland Protectorate, adjacent to the Southern Rhodesia border''; and the late S. F. Townsend (M.S.) found it common in Bechuanaland in 1890 and 1891, and also records it from the Khami River, Matabeleland.

Still further north, in East Africa, its status is even more obscure. Mackworth-Praed and Grant record it from Kenya and from Ethiopia, the former probably on the authority of Horsbrugh (1912), who states that he has shot it there; and the latter on that of Woodman (1945a), who quotes information from Italian sources but states (1945b): ``never supported by a skin''. These records are ignored or rejected by Delacour (1956), who gives the Botletle River, in Bechuanaland Protectorate, as the northern limit in the east. We do not profess to be able to judge this matter; and the solution must await further work by East African ornithologists.

In the south-west Cape, the Cape Bird Club vlei counts have shown that the Shoveller is second in abundance only to the Yellowbill *Anas undulata*, being more abundant than even the Redbill *A. erythrorhyncha*. The maximum recorded in any single day's count was 1,740–1,000 on Riet Vlei, 700 on Rondevlei and 40 on Noordhoek—on 9th December, 1956. It becomes much less numerous further north, ``usually only a dozen or two'' on Barberspan (Shewell, 1959), up to 30 on Bloemfontein Sewage Vlei, up to 19 at Graaff-Reinet (Taylor, 1957). J.M.W. has records of it from only ten localities in the western karoo. Numbers of 50 to 157 have been counted on the Wilderness lakes, between George and Knysna, in December and January. Liversidge (1958) records 752 on the dams of the Free State goldfields in November, 1957, the bird being present on 19 of the 33 dams counted, with a maximum on any single dam of 270 on Witpan.

Analysis of the Field Cards in the Cape Bird Club collection shows that the Shoveller has been recorded from eight different habitats, including two varieties of indigenous bush on the Flats; but is only present on over 20% of the cards relating to two of these, permanent vleis (on 55% of the cards) and temporary vleis (on 60%). It is recorded on 17% of the cards for rivers with sandy beds and 7% of those for lagoons and for salt-pans. Calculations giving due weight to the different number of cards for each habitat suggest that 38% of all Shoveller records are on temporary vleis, 36% on permanent vleis, 11% on sandy rivers, 5% each on lagoons and salt-pans, 3% in Strandveld (undoubtedly referring to birds breeding away from water) and 2% in reed-beds.

TABLE I

COMPARATIVE MEASUREMENTS OF NORTHERN AND CAPE

Form	*Authority*	*Wing*	*Tarsus*	*Beak Length*	*Width of Beak*		*No. of Birds Measured*
					Maximum	*Base*	
Anas clypeata ♀ ♂	Bannerman (1930)	230–260	34–39	63–70	–	–	(Many)
	M.—Praed & Grant (1952)	217–249	–	–	–	–	–
Anas clypeata ♂	Delacour (1956)	230–252	32–37	62–70	–	–	–
	Witherby *et al.* (1943)	232–252	33–37	62–69	–	–	12
	McLachlan & Liversidge (1957)	253	33	76	–	–	1 (?)
	Winterbottom & Middlemiss	240–249	32–34	65–70	31–34	16–18	3
Anas clypeata ♀	Delacour	215–235	–	56–69	–	–	–
	Witherby *et al.*	217–235	–	59–64	–	–	–
	Winterbottom & Middlemiss	228	33	60	27	16	1
Anas smithii ♀ ♂	M.—Praed & Grant	212–242	–	–	–	–	–
	Winterbottom & Middlemiss, skins	245	–	58	28.5	17	1
	Same, live birds	213–252 (av. 232.2)	35–45 (av. 40.3)	55–65 (av. 59.6)	27–32 (av. 29.5)	–	50
	Same, live first-year birds	169–233 (av. 217.5)	33–40 (av. 38.1)	51–59 (av. 54.8)	25–29 (av. 27.4)	–	12
Anas smithii ♂	Delacour	225–245	35–40	62–64	–	–	–
	McLachlan & Liversidge	230–250 (av. 241)	34–38	54.5–60	25.5–30	–	4
	Winterbottom & Middlemiss	238–252	33–38	62–63	27–28	18	3
Anas smithii ♀	Delacour	220–225	–	60–62	–	–	–
	McLachlan & Liversidge	230–248 (av. 236)	33–39	55–64	24–27.5	–	3
	Winterbottom & Middlemiss	231–247	34–36	57–64	26–30	18–19	2
SUMMARY:							
Anas clypeata	All above	215–260	32–39	56–70	27–34	16–18	–
Anas smithii	All above	212–252	33–45	54.5–65	24–32	17–19	–

The population pattern in the Cape Peninsula is a simple curve from a minimum in April to a maximum in December, with none of the irregularities shown by other species of duck (Winterbottom, awaiting publication). From May to August, most of the population is on Riet Vlei and from October to January, Rondevlei contains an increasingly large proportion of the birds present. 69% of the birds trapped for ringing at Rondevlei were trapped in December (43%) and January (26%).

Barberspan shows a similar curve but with a maximum three months and a minimum six months later. Broadly speaking, the Shoveller is most abundant at Barberspan when it is least abundant in the Cape Peninsula and *vice versa*; and the month of minimum abundance at Barberspan (October) is that of maximum abundance at Graaff-Reinet. The Bloemfontein figures are inconclusive.

An analysis of the 184 breeding records in the Cape Bird Club collection shows, when these are plotted for estimated date of clutch completion, that there is a marked peak in the second half of August and another in the first week of October; and that 88% of the clutches are laid between August and September. This is the most pronounced breeding peak of any duck in the south-west Cape. E.H.J.M.'s records show that early-breeding birds are paired by mid-May; and that the primaries are moulted between July and November, but most birds moult in October. Unfortunately, the Shoveller seldom enters a trap a second time (only two re-traps at Rondevlei), so that it has not been possible to trace the moult in detail in individual birds.

Outside the south-west Cape, J.M.W. has a record of a duck and ducklings from the Fraserburg District in November; and there are seven records in the South African Ornithological Society's Nest Record Card collection, of which two refer to the President Brand Mine, in the Orange Free State, and the others to the Rondebult Sewage Works on the Witwatersrand. The Free State records refer to the same day, in November; the Rand records are one each for the months of March, April, July, August and September.

We can conclude, therefore, that the Shoveller shows local movements according to the water conditions, at least in the Cape Peninsula area, but it is nonetheless a true migrant, moving north and south, a conclusion supported by the only ringing recoveries recorded: of a bird ringed at Barberspan and recovered at Bredasdorp; and of two ringed at Rondevlei and recovered, one at Redlinghuis, west of Clanwilliam, and the other at Piquetberg. It also appears that the birds breed chiefly in the south-western Cape and more sparingly further north in the Union of South Africa, all more northern records being of off-season visitors. This would account for the comparative rarity of the species in the north, since the entire breeding population spreads out over an area from the southern Cape north to Damaraland on the west and, perhaps, Ethiopia on the east. Local concentrations, such as that on the Nata River referred to above and the "fair numbers" reported from Brandvlei, north of Calvinia, 9–10th October, 1954 (Skead and McLachlan, personal communication) may well be of passage migrants.

ACKNOWLEDGEMENTS

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SUMMARY

1. Benson's suggestion that records of *Anas clypeata* in the Cape are really due to aberrant drakes of *A. smithii* is discussed; and reasons are given for rejecting it; though the problem of such records is by no means solved.

2. Comparative data are presented on *A. clypeata* and *A. smithii*, including, for the first time, measurements of an adequate series (50 adults and 12 first-year birds) of the latter. It is concluded that *smithii* differs from *clypeata* in the following major ways: the male lacks a specialised breeding plumage; the plumage is generally darker; the shafts of the primaries are brown, not white; and the beak is less spatulate. These differences are considered to be adequate to support specific distinctness.

3. Evidence is put forward to support the view that the Cape Shoveller breeds chiefly in the south-west Cape, and mostly in August–October, subsequently dispersing northwards. Its northern limits are not yet firmly established.

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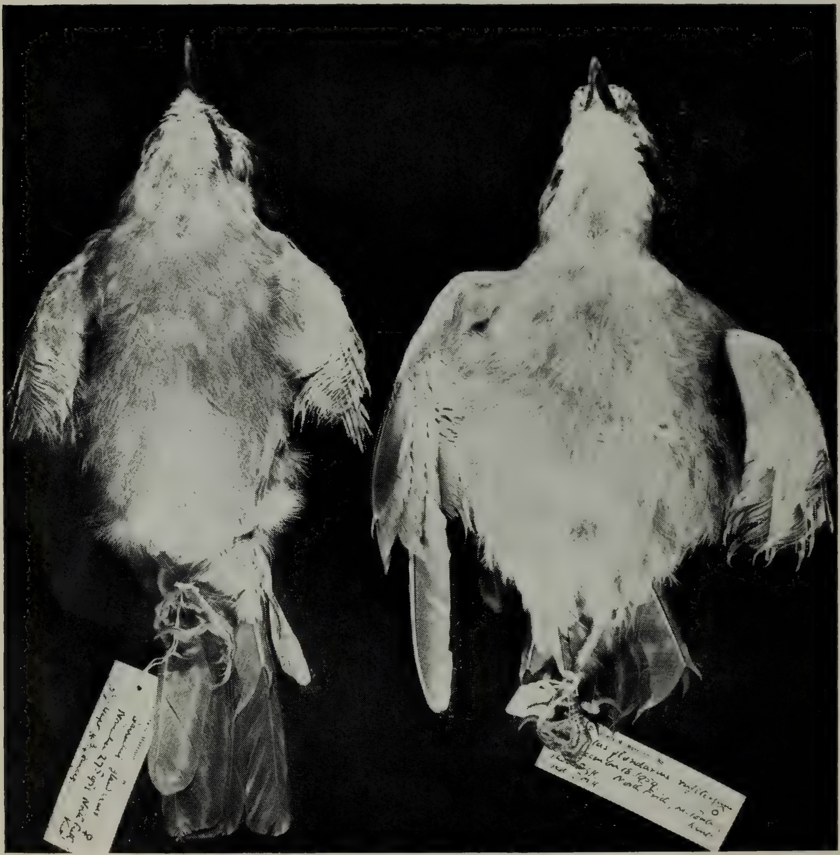
The flightless Jay—what is the explanation?

by Dr. James M. Harrison

Received 24th May, 1960

Some years ago I had given me a Jay, *Garrulus glandarius rufitergum* which had been caught by a game-keeper at Shoreham, in Kent. He found that it had no flight feathers except the left first primary and also lacked all the rectrices.

The feathers were broken off at about one third of an inch from their

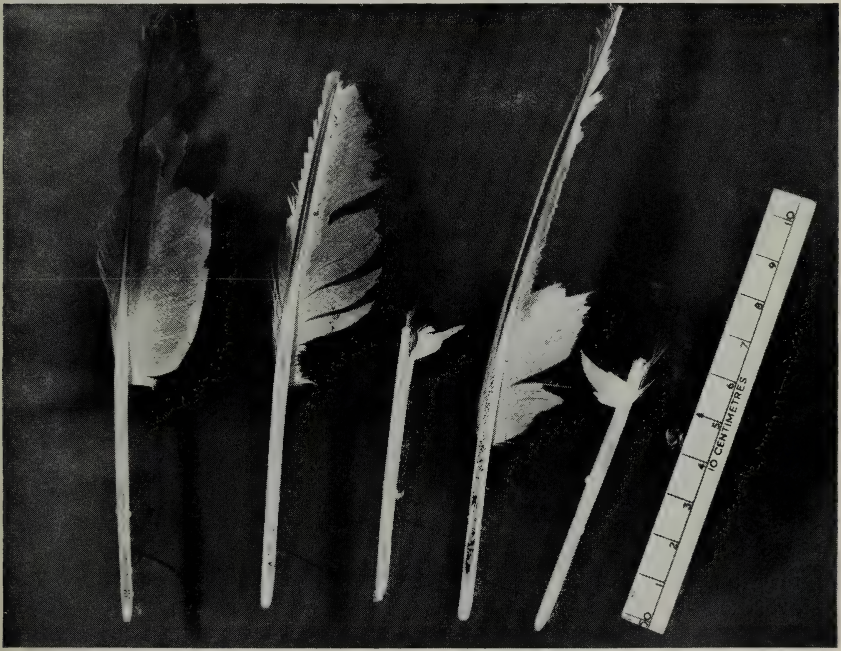


Two examples of the Jay, *Garrulus glandarius rufitergum* Hartert showing the condition of feather fragility in remiges and rectrices.

insertions and it was concluded, in the absence of any better cause being found, that it might be the work of the depluming louse (*Lepeurus*). It must be admitted that no mallophaga were found, but as the bird had been dead some time it was thought that they might have forsaken their host.[1]

This view was recently questioned by Dr. J. S. Ash,[2] correctly I now believe in view of certain further evidence, mainly on account of the fact that in none of the subsequent cases were any ectoparasites found despite a careful search in all cases handled immediately after they had been obtained.

Dr. Ash (*loc. cit.*) records possessing a Carrion-Crow taken when about three weeks old from a brood of apparently perfectly healthy wild birds, stating that a few *Menacanthus* sp. were found on it when taken. It was reared on a diet which he suspected was extremely unbalanced containing a great excess of protein, and it was inferred that this caused the feathers to grow "very weakly and twisted, and after a few weeks *Menacanthus* swarmed over the whole of the body of the bird, feathers fell out at the slightest touch and the bird remained flightless."



Primaries from a flightless young Sheld-Duck.

The instances of flightless Jays known to me including the one already mentioned, number five although one was not handled. Two were obtained at North Frith, near Tonbridge, one a female on 27th November, the other a male on 18th December, 1959. The fourth example rests on the reliable information of Mr. Chilcott, at the time head game-keeper to

Lord Stanhope: this was obtained in 1958 at Chevening. Incidentally Mr. Chilcott was present at North Frith when the two specimens referred to above were taken, and Dr. Jeffery Harrison made an immediate search for mallophaga without finding any.

The fifth instance of this curious condition was met with in October last when I was on a collecting trip in Israel. This bird, a full juvenile, *Garrulus glandarius atricapillus* was shot by Dr. David Harrison and was examined immediately by myself. No mallophaga were found. However it was noted that the plumage was very degenerative in character and this suggested at once a very different aetiology. The bird's general condition was very good. Clearly as indicated by Dr. Ash (*loc. cit.*) there must be some other cause to account for this curious condition, though I doubt whether a dietary deficiency or imbalance is responsible. Indeed since the cases described above have occurred in wild birds a dietary inadequacy would seem entirely ruled out.

On re-examining the two specimens preserved (Plate I) atrophic lines are evident in the flight and tail feathers, and these lines affect not only the vanes but also the quills which are distinctly indented. This latter circumstance would of course render the feathers very liable to break, indeed in my opinion this could happen from flight stresses alone.

In September, 1957 my son, Dr. Jeffery Harrison, found a flightless Sheld-Duck, *Tadorna tadorna*, on the North Kent Marshes: it was caught and examined, some of its feathers being shown in the accompanying figure (Plate II). This instance was recorded in the "Shooting Times",[3] in the hope of others being reported. A careful search was made for mallophaga but none were found. Undoubtedly this bird must be regarded as in the same category as the Jays and Carrion-Crow.

In view of the fact that in all these cases no mallophaga were found the feathers of the Sheld-Duck were submitted to Dr. Theresa Clay, our leading authority on bird lice: her opinion was that it was not the work of these creatures. What other explanation can be offered?

There is a well known genetic condition in both mammals and birds in which the integumentary structures fail completely giving rise in the former to hairlessness and in the latter to the absence of feathers. It is equally well known that "frizzle" in birds is an inherited character, a dominant mutation, whilst "hairiness" associated with albescence is found in Jays and is almost certainly also an inherited mutation.

It seems therefore at least a possibility that these flightless Jays and other species affected by this condition, have inherited their feather fragility as a result of an unfavourable genetic factor which, though rare is nevertheless widespread, and the cause of the condition is therefore to be sought for in some far less obvious explanation than either that of parasitism or deficiency disease.

References:

[1] Harrison, James M. 1931. Jay rendered flightless by Depluming Louse. *Ibis*, 13.2.354.

[2] Ash, J. S. 1960. A Study of the Mallophaga of birds with particular reference to their ecology. *Ibis*, 102, 1, 95.

[3] Harrison, James M., & Harrison, Jeffery G., 1958. Sheld-Duck and Feather Disease. *The Shooting Times*, 29th August, 1958.

The systematic position of the *Ringed Teal*

by Paul A. Johnsgard

Received 12th May, 1960

In their classic revision of the Anatidae, Delacour and Mayr (1945) tentatively placed the South American Ringed Teal (*Anas leucophrys* of Vieillot, *Nouv. Dict. Hist. Nat.*, 1816:156) in the genus *Anas* of the tribe Anatini. Delacour had earlier noted certain peculiarities about this species, and had proposed (1936) the name *Callonetta* for the Ringed Teal. Later, Boetticher (1952) suggested that this generic separation of the Ringed Teal be retained and he tentatively placed it in the perching duck group (*Cairinini*) but indicated that it was possibly a relative of the pochard group (*Aythyini*). Delacour (1956) has since retained the species in *Anas*, although he too suggests that it might be related to the pochards. After comparing morphological and behavioural characteristics of this species at the Wildfowl Trust, Slimbridge, I have become convinced that the Ringed Teal should be placed in a monotypic genus *Callonetta* in the perching duck tribe Cairinini, between the genera *Nettapus* and *Aix*.

In the following morphological characteristics the Ringed Teal shows its perching duck affinities: Its tertials are highly metallically colored as in most perching ducks rather than with the metallic coloration restricted to the secondary feathers as is typical of *Anas*. Its underwing coverts are black, as in the perching duck genera *Sarkidiornis*, *Nettapus*, and *Amazonetta*, but unlike any species of *Anas*. Although the male is brightly colored it lacks an ‘‘eclipse’’ plumage, as is also true of two of except the three species of *Nettapus* and all other perching duck genera *Aix*. Nearly all brightly-colored species of *Anas* have a distinct postnuptial, or ‘‘eclipse’’, plumage. The female is a drab greyish-brown color, and lacks the characteristic dark brown and buff ‘‘U’’-shaped markings on the body feathers typical of most *Anas* species. In her plumage pattern the female much more closely approaches various perching ducks (*Nettapus*, *Aix*, *Amazonetta*) than any females of *Anas*. The down feathers are white in color, as is typical of the perching ducks but not of *Anas*. The downy young are extremely similar to those of *Nettapus*, being only somewhat larger in size. The species has been hybridized in captivity only with the perching duck *Amazonetta brasiliensis*. (Johnsgard, 1960).

The trachea of the male has never been described to my knowledge, but one obtained from an adult male at the Wildfowl Trust is unlike that of any *Anas* species known to the writer. There is a small, relatively spherical, bulla at the syrinx which, as usual, protrudes towards the left. It is thin-walled, 9 mm. in its widest diameter, and is obviously the result of the inflation of two tracheal rings, since there is an incompletely ossified setion somewhat below the center of the bulla. The tracheal tube is uniform in diameter throughout, and there is nothing in the structure of the tracheal tube or bulla which suggests affinities with the Aythyini, all of which have very distinctive tracheae. The bulla is thinner and less complex than that of any species of *Anas* I have seen (approximately 20), but is roughly intermediate between the tracheal conditions of male *Nettapus* and *Aix*. In the former genus there is no real bulla present, and the tracheal rings of the syrinx exhibit only a slight tendency towards enlargement on the left side. In *Aix sponsa* the trachea of the adult male has a medium-sized bulla (17 mm. in widest diameter), which is rather uniformly thin and has a simple, distinctly spherical, shape. In *Anas* the bulla is very variable in size but is always rather strongly and uniformly ossified and usually of a more complex, angular structure. The voice of the male is a very soft, high-pitched note somewhat like the ''Meeee-owww'' of a domestic cat, or the display notes of the Wood Duck and Mandarin Duck. The male completely lacks the low, reedy, ''Raeb'' note of most *Anas* males. The female also lacks the usual *Anas* ''decrescendo call'' (see Lorenz, 1951-1953). Her courtship call is rather harsh and piercing ''Hou-eeee'' which is totally unlike the voice of any *Anas* female known to me, but is almost identical both in sound quality and associated head movements to the courtship call of female Wood Ducks and Mandarin Ducks. No other female ducks known to me have similar head movements and calls.

In its general behaviour the Ringed Teal is a typical perching duck. It perches to a much greater degree than so any species of *Anas* I have seen. It normally takes its food from the water surface or in very shallow water, and rarely if ever dives for food. In this respect it is very much like pigmy geese (*Nettapus*) and the Mandarin Duck and Wood Duck. At the Wildfowl Trust it invariably nests in enclosed boxes well off the ground, as do typical perching ducks. Evidence for its usual hole-nesting behaviour is the relatively long (29 day) incubation period which is longer than most if not all species of *Anas*.

The sexual behaviour of this species will be described in greater detail at a later time, but the following major points might be noted here. The male appears to lack elaborate postures altogether, which is typical of many species of perching ducks but not of *Anas*. The major male display appears to be simply a rapid swimming beside the female with the tail being slightly raised, in a similar fashion to that described by Lorenz (1951-1953) for the Wood Duck except that the back of the head is not directed towards the female. Ritualized preening behind the wing has only been seen on a few occasions, and always appeared to be used as a threat display towards other males. The female's ''inciting'' behaviour consists of alternately making threatening movements towards another male and ''caressing'' movements with her bill towards the cheek of her mate or potential mate, in exactly the same manner as Lorenz (1951-1953) describes for *Aix*. This is completely different from the highly ritualized form of inciting which is found in *Anas*. In its copulatory behaviour, which has been observed on numerous occasions, the Ringed Teal is extremely reminiscent of the Wood Duck. There is no mutual precopulatory head pumping as is found in all species of *Anas*, but rather the male swims up to the female with his head held high and neck erect, facing the female at a diagonal angle and occasionally making dipping movements with the bill. The female rapidly assumes a prone posture, with no previous head movement. The male may peck at the female's head and back for a few seconds before mounting. After treading the male slips off to one side and utters his display call with a characteristic head-toss, usually lifting his tail strongly to display the white tail-covert markings, then turns to face the female as she begins to bathe. Unlike male *Anas*, I have never seen the male bathe after copulation. In nearly every respect the copulatory behaviour is almost exactly like that of the Wood Duck but unlike *Anas*.

I therefore believe that there is no justification for leaving the Ringed Teal in the genus *Anas*, and that it undoubtedly is a member of the Cairinini, most probably belonging between the pigmy geese and the Wood-Mandarin Duck group, as a separate genus *Callonetta*.

This study was financed by a National Science Foundation post-doctoral fellowship.

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Lorenz, K. Z. 1951–1953, Comparative studies on the behaviour of the Anatinae. Avic. Mag., 57: 157–182; 58: 8–17, 61–72, 86–94, 172–184; 59: 24–34, 80–91.

The Wildfowl Trust, Slimbridge.

A comparative study of the method of skull pneumatisation in certain birds

by DR. JEFFERY G. HARRISON

Received 10th June, 1960

PART ONE

Introduction

In recent studies on skull pneumatisation, various authors have discussed the possibility of the pattern of pneumatisation being of significance in problems of avian systematics. Thus, Chapin[1] referring to skulls in which pneumatisation is incomplete in adult life stated that the pattern "may furnish evidence as to immediate relationships". Verheyen[2] went further when he stated that it seems established that in each natural group composed of birds of the same family, the pneumatisation of the cranial vault reaches the same level of development. He found this rule held for all the groups he had studied, which developed only partial pneumatisation and he concluded that the pattern of the apneumatic "windows" characterised a group of related birds and could therefore be used as a systematic criterion.

Dr. David Harrison and I[3] thought it unwise to use the presence of "windows" in the adult skull as factors of systematic importance, on the assumption that such "windows" are adaptations for flight or for diving and are therefore likely to have evolved in response to these habits in otherwise unrelated species. We thought however, that the method of pneumatisation might be of some systematic significance. In a later review of skull pneumatisation[4] I was able to show many examples of parallel evolution in unrelated species and conversely, very different skulls in closely related species (Cormorants, *Phalacrocorax* and Peruvian Pelican, *Pelicanus occidentalis* Linnaeus; Snipe, *Capella gallinago* (Linnaeus) and

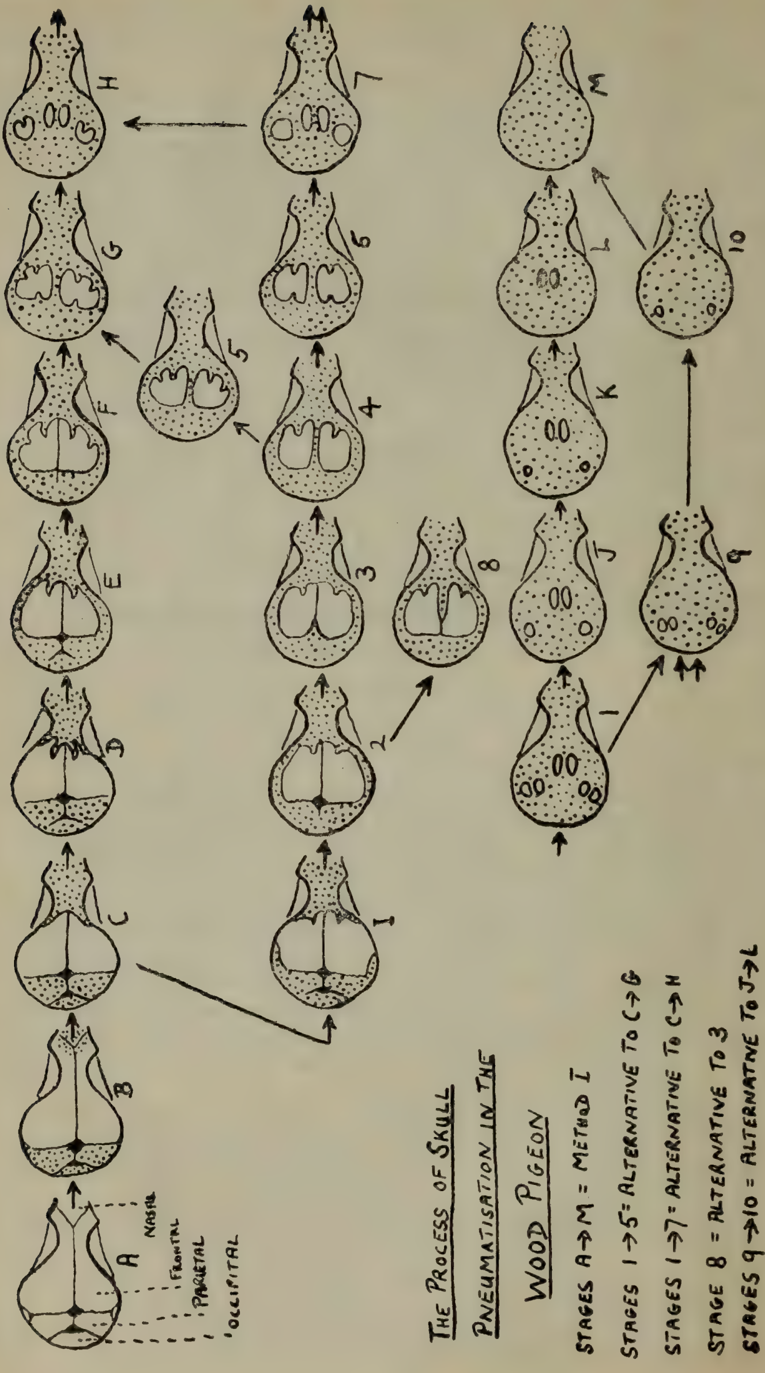
THE PROCESS OF SKULL
PNEUMATISATION IN THE
WOOD PIGEON
STAGES A→M = METHOD I
STAGES 1→5 = ALTERNATIVE TO C→G
STAGES 1→7 = ALTERNATIVE TO C→H
STAGE 8 = ALTERNATIVE TO 3
STAGES 9→10 = ALTERNATNE TO J→L
A
NASAL
FRONTAL
PARIETAL
OCCIPITAL
B
C
D
E
F
G
H
I
2
3
4
5
6
7
8
I
J
K
L
M
9
10

Diagram 1

TABLE

Species	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	1	2	3	4	5	6	7	8	9	10	*Intermediate between stages*	*New stages*	*Total examined*
Wood Pigeon	1	1	1	2	9	3	35	248	2	184	1	96	60	2	3	4	60	22	22	13	2	1	3			792
Stock Dove							5	14	1	4	12	27	11				6	4	1	3				7		95
Rock Dove								26		1	5	6	2				6	1	5					1		54
''Domestic'' Pigeon						1	1	7			8	17	8		1				5					2		50
Turtle Dove				2							4	14	1		2			5		1				1	25	51
Laughing Dove												8													2	10
Collared Dove								1							1											2
Diamond Dove												1														1

Jack Snipe, *Lymnocryptes minimus* (Brünnich)), while in wildfowl, the amount of pneumatisation was shown to diminish with the increasing efficiency of the species as an underwater diver[5].

This paper attempts to make a comparative study of the method of pneumatisation in several species, to learn what variation there may be and whether the method affords any clues as to relationships between those species. Two detailed studies have already been published, one by Nero[6] on 346 House Sparrows, *Passer domesticus* (Linnaeus) and the other by myself[7] on 792 Wood Pigeon, *Columba palumbus* Linnaeus. Our results showed striking differences between the two species and this paper takes the investigation a stage further and is based on studies of skulls of a number of different species. My findings on the Wood Pigeon are now compared with a series of Stock Doves, *Columba oenas* Linnaeus; Rock Doves, *Columba livia* Gmelin; and the domestic varieties; Turtle Doves, *Streptopelia turtur* (Linnaeus); Laughing Doves, *Streptopelia senegalensis* (Linnaeus); two Collared Doves, *Streptopelia decaocto* (Frivaldszky), and a Diamond Dove, *Geopelia cuneata* (Latham). A series of House Sparrows has been dissected to compare with Nero's findings and the investigation is completed with a series of Starlings, *Sturnus vulgaris* Linnaeus, and *Corvidae* consisting of Red-necked Raven, *Corvus corax ruficolis* Lesson; Carrion Crow, *Corvus corone* Linnaeus; Hooded Crow, *Corvus cornix* Linnaeus; hybrid Hooded x Carrion Crow; Rook, *Corvus frugilegus* Linnaeus; Jackdaw, *Corvus monedula* Linnaeus; Magpie, *Pica pica* (Linnaeus); Jay, *Garrulus glandarius* (Linnaeus); and Chough, *Coracia pyrrhocarax* (Linnaeus).

Method of Pneumatisation in certain Pigeons.

In my study of the Wood Pigeon, I was able to show that there was a definite method involved, with one or two minor variations. The drawings of the skull vaults as seen from above summarise these findings diagramatically, the development of the pneumatised bone being represented by the dotted areas. It was found unnecessary to draw the base of the skull, as this is the first part to become pneumatised. This diagram is reprinted here to show the method involved and on the opposite page is shown a table analysing the findings on the other species of pigeon examined. Each skull stage is lettered or numbered and the number of skulls examined corresponding to each stage is recorded by species. It will be seen that the Stock Dove, Rock Dove and its domestic varieties all conform exactly to the method described for the Wood Pigeon, only one skull each of a Stock Dove and a Rock Dove being somewhat different in having an occipital "window" still present, whereas this normally pneumatises early. It is not considered that this represents a different method, but reflects the pawcity of early stages in the Wood Pigeon series. The Wood Pigeon, Stock Dove and Rock Dove all belong to the Genus *Columba*, but when we consider two *Streptopelia* doves, the Turtle Dove and the Laughing Dove, it is apparent that the later stages are somewhat different, these being shown diagramatically as stages A1–A2–A3–A4–A5, which have not been found in the *Columba* species examined. Only two examples of Collared Doves and one Diamond Dove have as yet been examined and all conform to stages already described.

The time factor. It was found impossible to assess with any accuracy the time taken for the Wood Pigeon to reach full pneumatisation, but an estimate of 6–18 months was given and the same would appear to be true for the Stock Dove, Rock Dove and Turtle Dove.

A comparison of the combined percentages of the two most advanced stages, L and M in the different species is of interest. It is as follows:—Wood Pigeon, 19.6%; Stock Dove, 40%; domestic Pigeon, 50%; Rock Dove, 14.8%. The Rock Dove series should be discounted, as my series was collected on agricultural land in mid-summer, when many adults were nesting on the cliffs. The higher percentages of the Stock Dove and domestic pigeon probably indicate a greater expectation of life than the Wood Pigeon, the latter because such birds are not normally shot and the former because they are considerably more difficult to shoot.

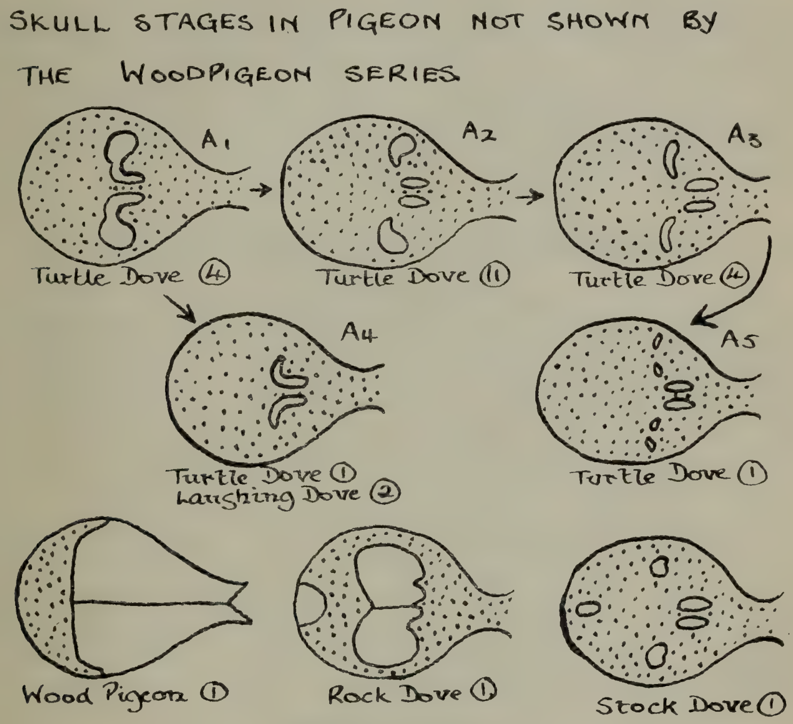
SKULL STAGES IN PIGEON NOT SHOWN BY THE WOODPIGEON SERIES
A1
Turtle Dove ④
A2
Turtle Dove (11)
A3
Turtle Dove ④
A4
Turtle Dove ①
Laughing Dove ②
A5
Turtle Dove ①
Wood Pigeon ①
Rock Dove ①
Stock Dove ①

Diagram 2

Method of Pneumatisation in the House Sparrow.

This series of skulls compares very closely with the findings of Nero, the main differences between our findings being that I have rather more of the early stages (3–7) and I find that pneumatisation takes place laterally in the parietal and temporal bones (stage 7) rather sooner than it appears in Nero's series, but his projection from accurate linear measurements gives a relative picture with some distortion towards the borders, which probably accounts for this difference.

It will be seen that the method involved is somewhat different from the pigeons already described. The stages H—L of the pigeons, with the alternatives 7, 9 and 10 are not found in the House Sparrow, where two large "windows" in the frontal bones gradually diminish, eventually leaving two small "windows" just posterior to the orbits, as the last to pneumatise (stage 14). This might correspond to stage L of the pigeons, except that the two residual "windows" are placed further forward in the Sparrow and are irregular in shape.

The time factor. Nero found that pneumatisation may be complete in ringed House Sparrows as early as 181 days after hatching, but one was still incomplete at 221 days. One immature I examined on 24th August was already completely pneumatised as was another on 30th September. If we assume these had hatched in early May, then pneumatisation would have completed in 3–4 months. Certainly the majority are complete in six months in this country. (See Diagram 3, Part Two.)

[*To be concluded*]

Scoptelus aterrimus in Northern Rhodesia

by Mr. C. W. Benson

Received 8th July, 1960

Recently Mr. Rudyerd Boulton drew my attention to the possibility of the occurrence of this species in Northern Rhodesia, *S. a. anchietae* Bocage being known from Benguella north to the Lower Congo, thence as far north-east as Kwamouth (Chapin, 'Bds. Belg. Congo' 2, 1939: 330). This form has also been recorded in the Katanga, as far east as 26° (Schouteden, 'Vog. Belg. Congo' 4, 1951; 69). On 20th November last I collected two males in the Balovale District, in *Burkea* woodland by the Lungwebungu River at 13°35′S., 22°19′E., which Mr. C. M. N. White agrees with me are indubitably this species. They are now in the National Museum, Bulawayo. Measurements in mm. are:— culmen from base 27, 30; wing 111 (both); tail 137 (originally, now partly defective), completely defective in the second specimen. This record was not included in my paper, "Recent records from north-western Northern Rhodesia", already in press for 'Bull. Brit. Orn. Cl.'.

Special Notices

The Thirteenth International Ornithological Congress will be held at Cornell University, Ithaca, New York, U.S.A., from 17th to 21st June, 1962. The President is Professor Ernst Mayr.

The International Ornithological Congresses are scientific meetings which have been held at intervals since 1884. Since 1926 a four-year cycle has been maintained except for a twelve-year interruption caused by World War II. The previous Congresses have been held in continental Europe and England.

Persons wishing to receive further announcements, and membership application forms for the Thirteenth International Ornithological Congress, should send their names and permanent mailing address to the Secretary-General, Professor C. G. Sibley, Fernow Hall, Cornell University, Ithaca, New York, U.S.A., before 1st February, 1961.

It is regretted that the plate in illustration of "Further remarks on Female Plumages of the Tufted Duck" was omitted from the last issue, but it will appear in a later paper.

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2 P.-

Notices

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DINNERS AND MEETINGS FOR 1960

20th December.

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